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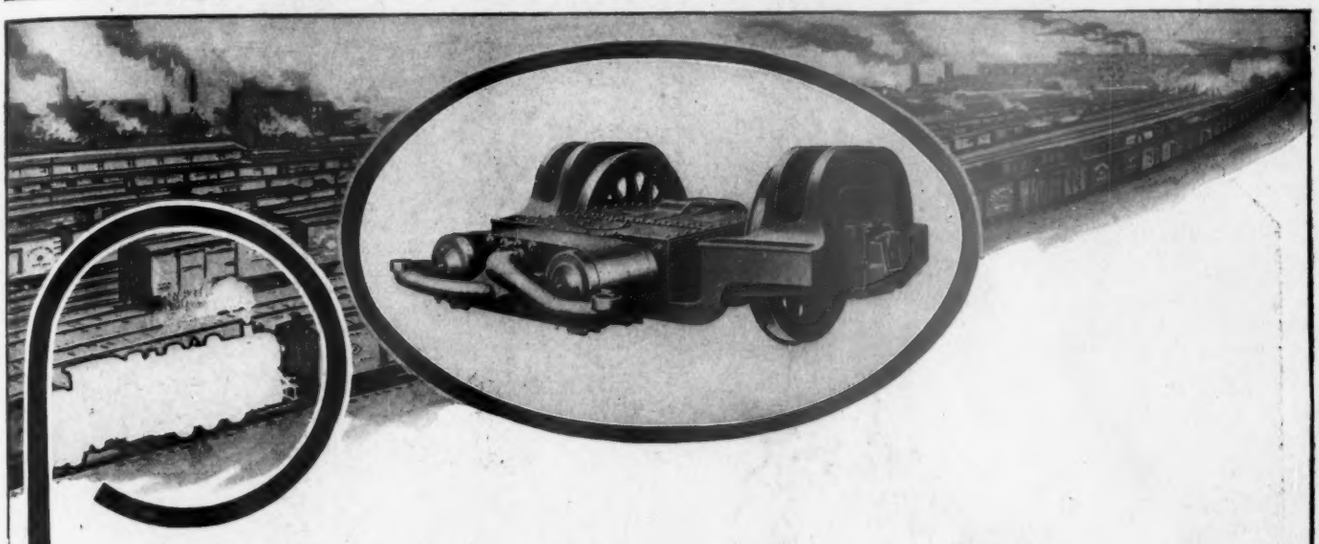

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EDITORIAL

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Removal of Our Washington Office

THE WASHINGTON OFFICE of the Simmons-Boardman Publishing Company will be removed on October 1 from 64 Home Life building to Room 815 in the new Transportation building, Seventeenth and H streets, Northwest. The Washington offices of the Association of Railway Executives, now located in the Munsey building, the American Railway Association, at 718 Eighteenth street, and the Bureau of Railway Economics, now in the Homer building, are also to be brought together shortly in the new Transportation building, where the railway organizations have leased two floors.

The Standing of Publicity Men

Some railroads unfortunately have not yet accorded to their publicity forces a standing commensurate with their importance in the conduct of the companies' business. On one road not so long ago we noticed that it was apparently much easier for a casual visitor to gain admittance to the road's principal officers than it was for its own director of publicity. On another road the company's official photographer was harassed by the special police while he was attempting to secure photographs of an accident for the company's archives. This is an absurd situation. A newspaper photographer armed with a police badge or card is allowed to circulate anywhere through police and fire lines, and yet in this instance the railway police did all they could to hamper a photographer taking pictures, not for the newspapers, but for the company itself. Executive officers cannot, however, expect their subordinates to show any great respect for a class of service which they themselves hold in slight esteem. Furthermore, the lack of standing of a publicity officer seriously hampers the effectiveness of his work in dealing with newspaper editors and reporters. These latter are quick to sense any lack of authority on the part of the man whose function is to deal with them and his advice and opinions consequently carry little weight. Public relations work and the men who have charge of it are accorded their proper importance on many roads on this continent. Unfortunately, however, this happy condition is not nearly as general as it should be.

New England Grouping Favored

The Interstate Commerce Commission began its hearing in Boston on Monday relative to the disposition of the New England roads in the consolidation plan. In commenting in an editorial in last week's issue on the factors that would probably be brought out at these hearings the *Railway Age* pointed out that there was a clean-cut issue in New England between those who favored a regional New England grouping and those who favored affiliation of the various New England properties with respective trunk lines. Reference was made to the fact that the Boston Chamber of Commerce had recently conducted a referendum vote which decided by three to one in favor of a New England system. The editorial continued, "It is impossible as yet, however, to determine whether the New England public opinion is predominately of that opinion." In the week that has since intervened several things have taken place that make it possible to determine more clearly New England's opinion on this question. The New England shipper has expressed himself, in no uncertain terms, as desiring a New England grouping and the votes in favor of that plan have been so decisive as to indicate that the New England public will have nothing to do with suggestions for trunk line affiliation if it has anything to say about it. The Boston Chamber of Commerce vote was 1477 to 420 in favor of New England unification. On September 21, the Providence Chamber of Commerce announced its vote as being 388 to 85—four to one—in favor of the New England grouping. The Massachusetts State Chamber of Commerce has also put itself on record as favoring the New England plan. The member bodies of the Connecticut Chamber of Commerce have voted 285 to 11 likewise in favor of New England consolidation. Of course, these votes do not settle the question by any means because there is as yet no proof that the New England roads could stand on their own feet, and the plans that have been offered to that end are still far from adoption. It is also true that it is the function of the Interstate Commerce Commission and not that of the chambers of commerce to decide how the New England railroads should be allocated in the plan of railway consolidation. The predominating vote in favor of New England control of its own railroads, however, will undoubtedly be given considerable weight by those who have to make the final decision.

How Railways May Compete

While the railways have suffered severely from drastic regulation in recent years, the electric railways have suffered even more acutely. In addition to limitations in rates in the face of rapidly rising costs of operation, they have been confronted with the competition of the motor bus which has made large inroads in their earnings. In their struggle to survive, it would not be surprising, therefore, if some of them developed some measures which the steam roads could study with profit. One electric road which has prospered during the difficult period and has developed a greatly increased business is the Chicago, North Shore & Milwaukee, a high-speed electric line operating between Chicago and Milwaukee, Wis., a distance of 85 miles. This line is paralleled for its entire distance by hard roads and, therefore, faces active motor bus competition. Recognizing this fact, it has itself installed motor buses which operate between a number of the more important points on its lines. By the use of vehicles of unusually good construction, it is providing satisfactory service for those who prefer this mode of transportation and is able to control competition in large measure and to prevent the destructive competition which is so prevalent among inexperienced motor bus operators and which is so injurious to the railways as well as to the bus operators. This company has also utilized motor buses as feeders to its lines, operat-

ing them in conjunction with its trains to points remote from its rails. By this combined service, it has been enabled to secure a considerable volume of traffic for its trains which would otherwise pass over other routes. During the past summer it has established motor coach tours in conjunction with and also independent of its rail lines, some of which have extended more than 100 miles beyond its rail lines. In short, this road has taken steps to utilize this new form of transportation as an ally rather than as a competitor. By these measures it has also developed business where none existed. There is a lesson in this development which the steam roads can well afford to study. The railways have done much to develop the newer sections of the west through their traffic and colonization departments. They have also been active in stimulating tourist travel. They have not, however, been equally active in developing local business in the more thickly settled portions of the country or in meeting the competition of newer forms of transportation. Too frequently they have installed additional service *after* electric line or motor bus competition has developed, rather than forestalling it by taking the initiative. In contrast with this general practice, the Chicago Great Western has recently placed in service a number of motor trains by means of which it is providing more frequent service for the communities along its lines, the result of which will be to discourage other competition. The railways can well afford to give careful consideration to the development of their service in ways which will promote travel and at the same time forestall competition.

Misunderstandings About Employee Representation

IT IS UNFORTUNATE that the misunderstandings concerning employee representation on the Pennsylvania have been so widespread, and that the prejudice against it is so deep-seated in some directions. It is not surprising, however, that misunderstandings should have arisen when we consider the fact that so radical a step was made on such a large scale. Undoubtedly some of those who have had to do with its administration have failed to recognize the spirit of the plan and have made mistakes in its application and workings. Very little difficulty was found in installing it in some departments, and probably the same thing would have been true in the others had it not been for the unfortunate misunderstanding with System Federation 90 of the American Federation of Labor. Those who have studied employee representation and its application to other industries recognize that it is not advisable to try to develop it in times of labor disturbances. Its application has been most easily accomplished when there were no large controversies between the men and the managements and when the men themselves were first to advocate the plan. Its extension to the shop crafts on the Pennsylvania was made at an unfortunate time.

The plan on the Pennsylvania was first suggested by the train service men and was developed by them in co-operation with the representatives of the management. Its merits had been pretty generally demonstrated when the Pennsylvania Railroad invited the men in the shop crafts to hold an election with a view to applying the scheme to those crafts. This was done in the belief that it was in full accord with the spirit of the Transportation Act. A brief résumé of what followed is included in the following statement from the management:

"Owing to the activities of the System Federation No. 90, many of the shopmen refrained from voting, but the company recognized the representatives who were elected by the shopmen who exercised their right of franchise. With these representatives, the company negotiated rules and working conditions governing the shop crafts and also wage schedules which have been in effect since then, with modifications agreed upon between both parties. The company negotiated with these representatives, believing that the election was not invalidated by the refusal or failure of any of the shopmen to vote, on the same principle that in a municipal election failure of the majority to vote would not invalidate an election, and from the further fact that union men as well as non-union men had the same rights both to vote and to be elected as representatives. As a matter of fact, any officers of System Federation No. 90, who were employees, could have nominated themselves for representatives, and if they had received sufficient votes would have been elected and recognized *just as the union officers in other classes of employees were nominated and elected and recognized by the company.* (The italics are ours.)

"System Federation No. 90 then took the case to the United States Railroad Labor Board, which rendered a decision declaring the election invalid, nullifying the agreements entered into with the employees, ordering a new election and requiring that System Federation No. 90 should be printed on the ballots, that persons other than employees and organizations as such were eligible to represent the employees, and that the national agreements should be reinstated. As regards the Labor Board's order in this case, one might just as well say that in a county election people should vote for the 'Essex County Republican Club' and let the club select the actual office holders later on.

"The company denied the right of the Labor Board to issue such an order and appealed to the United States district court to enjoin the board from publishing an opinion that the company had not complied with the board's decision. The district court sustained the company and the circuit court of appeals reversed the district court. The company then carried the case to the Supreme Court, and while the Supreme Court ruled that the board had a right to make its decision, nevertheless declined to pass upon the merits of the issues involved and stated, 'The statute does not require the railroad company to recognize or to deal with or confer with the labor unions.' The decisions of the Labor Board with which this company has not compiled were rendered about two years ago, since which time the plan of employee representation has continued to develop and its success is evidenced by the fact that in elections just held to fill expiring terms of employee representatives, approximately 80 per cent of the employees affected voted in the election of employee representatives to deal with the company."

The employee representation system is not opposed to unionism or to collective bargaining; it is in itself a very clear-cut form of collective bargaining. The suggestion has been made that it is intended to destroy the labor union organizations. It does not appear to have in any way weakened the train service organizations on the Pennsylvania Railroad after several years of application; there is little question but what if the management attempted to take advantage of the men, because of the employee representation system, the men would quickly assert themselves and see that their rights and privileges were fully protected.

Walter Gordon Merritt, counsel of the League for Industrial Rights, in summing up the advantages of employee representation in an article in the Annals of the American Academy of Political and Social Science for September, 1922, made this statement: "To summarize all of the advantages of shop representation is a huge undertaking. Self-interest is no longer the exclusive guide of conduct and mutual interests are regarded. The moral development of each member of the factory organization, from the president down, becomes notable. Under-executives are led to a fuller understanding of the rank-and-file and the rank-and-file

take a new interest in business problems. Grievances are aired and corrected instead of breeding irritation and resentment. Foremen are restrained by a consciousness that their decisions may be reviewed. The square-deal is safeguarded by full hearings on both sides. The opportunities of the individual are better protected and special talents more surely discovered and recognized. The workers obtain a better appreciation of group responsibilities and the true meaning of representative government."

In view of these facts and also because of the prejudice against the Pennsylvania method which seems to exist in many quarters, the address by General Atterbury entitled, "He Profits Most Who Serves Best," reproduced in part elsewhere in this issue, is of special interest.

What Do You Read?

MR. RAILWAY MAN, do you read, and if so what do you read? Merely the daily newspaper?

A great struggle over regulation which involves the entire future of the railways is going on in this country. It directly and vitally concerns every railway officer and every man who hopes to become a railway officer. They should be better informed regarding the railroad question and every fact and argument bearing upon it than any other class of people. They should be equipped and ready to discuss it whenever it becomes the subject of conversation in any group of people in which they find themselves.

If railway officers and men who aspire to be railway officers will not take the time and trouble to read enough to inform themselves regarding the merits of such important questions as whether the rate-making provisions of the Transportation Act should be repealed, whether the valuation of the railways should be arbitrarily reduced one-third, whether the railways should be consolidated into a few systems, and whether the Railroad Labor Board should be abolished, how can they expect other people to take the time and trouble to inform themselves regarding these questions? Nobody can get informed about them except by reading the addresses that are being made, and the articles and editorials that are being written about them by persons who are competent to discuss them.

It would require only a comparatively small amount of time devoted to reading each day for every railway man in the country to become well informed regarding the railroad question. It may sound immodest for us to say so, but it is a fact that there is not a point involved in the controversy over railroad regulation that is not being elucidated and discussed in articles and editorials being published in the *Railway Age*. Take, for example, the issue of this paper for September 15. Do you want to know the facts about the present wages of railroad employees? A large amount of information concerning them was given in an editorial beginning on page 456 of the issue mentioned. Do you want to know something about the surcharge on sleeping car tickets? Hearings before the Interstate Commerce Commission on this subject were published in the same issue, beginning on page 471. Do you want to inform yourself regarding the question of railroad valuation? The two most important reports of the Interstate Commerce Commission on this subject yet rendered were reviewed and summarized in the same issue, beginning on page 489.

These are but a few examples of discussions of various phases of the railroad problem that are constantly made available in these columns.

Every railway man should not only desire to inform himself regarding the facts and arguments bearing upon controverted points with respect to regulation, but also, and more specially, regarding important problems affecting the development and operation of the railways. Every railway man can learn to do his own work better by profiting by the experience of men on other railways. A few railway men occasionally get opportunities to visit and study what is being done upon other roads. Most of them, however, if they are to profit by the experience of men on other roads must do so by reading what is published regarding what is being done on other roads. In the issue of the *Railway Age* for September 15 already mentioned there were published four papers by practical railway men regarding methods that can be successfully adopted to increase the amount of traffic handled by a line without increasing its facilities. Surely, that is a subject in which every transportation man should be interested at a time when the demands of traffic are so great and the ability of the companies to raise capital for new facilities so limited. In the same issue of this paper there was published an article showing how a substantial saving has been made on one road by the installation of automatic signal protection. There was a description of a new freight station which has just been built by one of the best managed railways in the country. There was a report of the recent convention of the Traveling Engineers' Association which included discussions of the economy of long locomotive runs, of the results of feedwater treatment and of automatic train control. Are you interested in knowing how much traffic the railways are handling? The detailed car loadings of all the railways of the country by regions are published in every issue of this paper.

There are railway men who pride themselves as being "practical" and who say they "haven't time to read." We met one of them a short time ago. He is about 55 years old and is still chief clerk to the general freight agent of a very small railway. A large majority of the higher executive officers of our railways are men who always have been able to find time to read since they were clerks, telegraph operators, brakemen, firemen, rodmen with engineering gangs, etc. One of the principal reasons why they have been able to rise is that they always have been able to find time to read.

Reading the literature of his business or profession is an essential part of the education that every man must get if he is really to succeed. A man must be "practical" to succeed. He must in addition, however, learn much that the "practical" man cannot learn in his daily work. "Experience is the best teacher," but the man who learns only by his own experience will never know much or go far. Reading is the best available way of learning much by the experience of other people.

Adopt the Standard Box Car

ONE OF THE MOST IMPORTANT QUESTIONS likely to face the representative members of the Mechanical Division of the American Railway Association, for some time, must be settled by letter ballot within the next few weeks. This is the question of adopting the designs for standard box cars proposed by the Car Construction Committee at the meeting of the Division last June. The question is an important one because the proposed designs are the result of the efforts of the railroads of America to secure standard box cars which have extended over a period of more than ten years.

The American Railway Association has been committed to the project since 1912. Late in that year and again in 1914 the association, then, as now, the official organization of the railroads, passed resolutions requesting the Master Car Builders' Association to design and adopt a standard frame for closed cars in accordance with standard inside dimensions. During the latter year the American Railway Association appointed a special committee to get behind the project, the members of which were the late E. P. Ripley, president of the Atchison, Topeka & Santa Fe, chairman;

Samuel Rea, president, Pennsylvania System; A. H. Smith, president, New York Central Lines; Julius Kruttschnitt, chairman executive committee, Southern Pacific Company; Howard Elliott, president, New York, New Haven & Hartford; Fairfax Harrison, president, Southern; C. H. Markham, president, Illinois Central, and the late Darius Miller, president, Chicago, Burlington & Quincy. A sub-committee, made up of representatives of the car building companies, was organized by the special committee to work up the designs. The advent of the war, however, put an end to the work of the special committee of the former American Railway Association, which was dissolved under government control, and the completion of the job was left entirely in the hands of the Car Construction Committee of the Mechanical Division of the reorganized American Railway Association. This committee took up the work after the return of the railroads to their owners.

The early work of the Car Construction Committee was wisely devoted to the establishment of certain standard fundamentals and limiting dimensions, effecting interchangeability of the parts most commonly requiring renewal in interchange. With this work as a foundation to build on, the committee has now prepared and presented designs of 40 and 50-ton box cars of single-sheath, composite construction, and double-sheath all-steel construction with wood lining.

The history of this movement, not only indicates clearly the extent to which the railroads have long been committed to the development of the standard box car, but clearly indicates that the designs are not the result of hasty, or immature consideration by the committee. The fact must not be overlooked that the members of the committee which developed the designs were selected to represent all sections of the United States and Canada, and that the railroads represented on the committee own at least two-thirds of the freight cars of America. Included in the list are roads which approach the problem of car design from the opposite poles of maximum strength on the one hand and of minimum weight on the other, as primary objectives.

The Car Construction Committee, since the presentation of its report, has been subjected to severe criticism, some of which has questioned the motives of the members. But the report, as finally adopted by the whole committee, has the unqualified support of the members representing the most directly opposed points of view with respect to the subject of car design. Such a composing of differences of opinion can only have been brought about through a high sense of responsibility for the common interests of American railroads as a whole.

What, then, is the real question facing the representative members of the Mechanical Division? Is it a question of standardization as a policy? Is it a question of the interests of the individual railroads, to the exclusion of all other considerations?

Or is it the question of securing the best possible designs for standard box cars that can be obtained through the voluntary action of the railroads?

It is, of course, the right of every representative member of the Mechanical Division to subject the proposed designs to a critical analysis before casting his ballot for or against them. It is also obvious that in doing this he has a right to keep in mind the interests of his own company. From this standpoint he will find that the committee has left a wide latitude for the use of alternate details, which leaves the choice of proprietary equipment and specialties practically unrestricted. He will also find that, in adopting the present standard designs for two types of box cars, he is not closing the door on the development of standard designs of other types, such as the double-sheathed car of composite construction, if cars of this type are desired by the members of the American Railway Association. The types at present proposed mark the beginning of a work which may be extended as far as is considered desirable by the association.

But the *Railway Age* believes that the question is one involving far more than the interests of the individual railroads. It is evident that the railroads as a whole have long been committed to the development of standard box car designs. It is also evident that the possibility of securing designs which will require any less compromise on the part of the individual members, by referring the matter back to a committee of different personnel, is extremely remote. The interests of all American railroads can, then, best be served by the adoption of the present designs. Failure to adopt them will, in effect, mark the failure of the American Railway Association to fulfill its avowed purpose and will inevitably be used against the railroads by the adherents of varying degrees of centralized control of railroad operations and ownership. It may well lead to the conclusion that no such designs ever can be established voluntarily by the railroads, a conclusion which will add to the political pressure already being exerted for imposing on the railroads standard equipment in which the freedom of choice of details embodied in voluntary standards, may be materially curtailed.

Valuation As a Basis of Rate-Making

THE RECENT DISCUSSIONS of railroad valuation, and especially the reports in valuation cases recently written by members of the Interstate Commerce Commission, show that the two most important questions with respect to this subject which were raised before the LaFollette Valuation Law was passed in 1913 are still unsettled. The valuation work done by the Interstate Commerce Commission and the railways as a result of the passage of Senator La Follette's law, has cost the taxpayers and the railways together more than 90 million dollars. How should the valuation be made? Of what real use will it be in the regulation of rates? These were the two principal questions raised before the La Follette law was passed. They still remain as completely unanswered as they were then.

There is no agreement among the members of any single class of persons as to the principles that should be applied in making a valuation. The reports written by members of the Interstate Commerce Commission show there is the widest divergence of opinion among them regarding the weight that should be given to actual investment, to present cost of reproduction, to the earning capacity of individual properties and to every other factor that may be considered. Even radical public men do not agree among themselves upon any point except that the principles and methods adopted should be such as to make the valuation low enough completely and finally to destroy the value of a large part of the outstanding securities. A fact which a large majority of people do not know is that there is almost as much difference of opinion among railway executives and lawyers on this subject as among the members of any other class of persons. Some of them believe that the valuation should be based mainly on the present cost of reproduction. It probably will shock Senator Follette to be told that other railway executives and lawyers would welcome the application of his theory that the valuation should be based on actual investment, although they know that this is not the law as stated by the Supreme Court. Some who represent roads with small earning capacity would willingly have "go-

ing value" ignored, while others who represent roads with large earning capacity believe that much weight should be given to going value. The truth is that most men's views upon the subject are determined very largely by their predilection for radicalism or conservatism, or by what they conceive to be their self-interest.

Out of all this muddle of thought and purpose may finally emerge a valuation which in some way now undetermined can be kept up-to-date. But it is evident the innumerable points in controversy will not be settled for years, and never will be settled satisfactorily to everybody, or perhaps even to anybody.

If once a valuation of each and all of the railways finally is arrived at and some method of keeping it up-to-date is determined upon, of what real use will it be for its main purpose—namely, that of serving as a basis for the regulation of rates? Every reasonable person will agree that the two principal purposes of regulation should be, first, to help secure for the public good an adequate transportation service, and, secondly, to help secure for the public the lowest rates consistent with the provision of such service. For reasons repeatedly stated in these columns the amount of the valuation will have little effect upon the general level of rates. The valuation law was passed in 1913. In the year 1922 the freight business handled by the Class I railways was only about 14 per cent more than in 1913, and the passenger business handled only about 4½ per cent more. The total amount the public paid them in rates, however, increased from $3,100,000,000 in 1913 to $5,600,000,000 in 1922, or 80 per cent.

The public had to pay so much more in rates principally because between 1913 and 1922 the operating expenses of the railways increased 105 per cent and their taxes 160 per cent. If the valuation had been finished in 1913 instead of being merely required to be made by a law passed in that year, it probably would have made little or no difference in the rates charged in 1922. The net operating income earned by the Class I railways in 1913 was almost 788 million dollars, while in 1922 it was only 777 million dollars.

The theory of valuation is that the net operating income earned by the railways is the main or sole measure of the reasonableness of their rates, and that by regulating their profits on the basis of a valuation the rates can be kept reasonable. In this period of nine years, however, the net operating income of the railways actually declined, while the total rates the public had to pay increased more than two and a half billion dollars. Reducing the profits of the railways did not keep down the rates. Did it have any effect upon their reasonableness?

The Supreme Court of the United States originally laid down the principle that the value of a railroad or public utility is the proper basis of calculating the reasonableness of its rates to protect such property from confiscation. As a legal principle this view doubtless is sound. At least it is the established law of the land. But principles of law and principles of economics and public policy are widely different things. The percentage of return earned by an individual railway, or a group of railways, or the railways as a whole upon a valuation arrived at by counting the number of ties, rails, locomotives and cars, the number of acres of land and other kinds of property used in rendering transportation service, and then multiplying these physical units by certain figures supposed to represent what was paid for them or would have to be paid for them now, never was, is not now and never will be a true measure of the reasonableness of the rates paid by the public to the railroads. The whole theory that it is is an economic monstrosity. The two real standards of the unreasonableness of entire schedules of rates are, first, whether traffic of all kinds under normal conditions moves freely on these rates, and, secondly, whether the net operating income earned by the railways on the rates is sufficient, but not more than is required, to cause an expansion of railroad facilities adequate to the demands of industry and commerce. Any fair and intelligent body of men, by using these standards, can determine whether entire schedules of rates are reasonable.

The experience of the last 20 years indicates that under present conditions the Class I railways should be earning approximately $1,200,000,000 net operating income annually in order to raise the new capital necessary adequately to expand their facilities. It would make absolutely no difference to the shippers on the one side, or the railways on the other, whether they got this net operating income by earning 6 per cent on a valuation of 20 billion dollars, or 10 per cent on a valuation of 12 billion dollars. If, however, as a result of the valuation being based on cost of reproduction at the present high wages and prices of materials, the net operating income earned should be substantially larger than this, an unnecessary amount would be collected from the public in rates. On the other hand, if as a result of the valuation being based, for example, on some estimate of the original cost of the railways or the market value of their securities, the net operating income earned should long be made substantially less than this, the consequence would be an inadequate development of the facilities of the railways which would be more harmful to the public than the charging of rates that were unnecessarily high. The fact that the unwise regulation was based on a valuation would not change its consequences.

The expounding of the doctrine at this late day that there really is no rational method of making valuation of railways for rate-making purposes, that no valuation ever made will be really useful in the regulation of rates, and that, therefore, the making of a valuation is a waste of money probably will be regarded by some people as extremely radical and by others as reactionary. But if a valuation is necessary as a basis for the determination of the reasonableness of rates, how was it possible for the Interstate Commerce Commission for at least 15 years to render decisions regarding the reasonableness of entire schedules of rates without any valuation? No valuation of railroads as a basis for the regulation of rates ever has been made or even attempted in any other country where the railroads are privately owned and managed. Nevertheless, in Great Britain, for example, the rates of the railways have been, and are now being, regulated with at least as much satisfaction to all concerned as is the case in this country.

Since the work of valuation has been carried so far doubtless it will be carried on to completion. There was a time when it was hoped that it would at least silence the controversy over the question of whether the railways are overcapitalized. It is now evident, however, that it will not silence that controversy, and that no matter what the final outcome is there will be in future an interminable controversy over the question of whether the valuation is too large or not. If it shall be made so small as to prevent the railways from earning the net return required to enable them adequately to develop their facilities, it will do nothing but harm. If it shall be much larger than the book cost of the railways it will authorize the railways to make profits which, if they fully exercise their legal rights, may cause a destructive outburst of public wrath against them. If it shall be just large enough to serve as a basis for producing a net operating income substantially equal to what the railways on sound economic principles would have to be allowed to earn anyway, it will do no good—and also no harm, except that it will cost a large amount of money. It would appear that the whole program of valuation will produce good results only if it has no results at all.

Moving More Traffic With the Same Facilities

Suggestions for Increasing Capacity of Line by More Intensive Methods of Operation

THAT MUCH CAN BE DONE to increase the capacity of many lines by the adoption of relatively simple expedients is indicated in the papers which were received in the contest on "Means of Increasing the Capacity of a Line." While many of these expedients are not new or novel, they offer sufficient opportunity for improvement in existing methods on many roads to warrant their publication at this time when the roads are handling the heaviest traffic in their history and are facing a still heavier business. The prize-winning and two other papers received in this contest were published in the *Railway Age* of September 15, page 463. Six other papers are presented below.

Anticipation of Peak Loads Will Aid

By H. V. Platt
General Manager, Oregon Short Line, Salt Lake City, Utah

Much can be done to increase the capacity of a railroad by anticipating as far as possible in advance what the requirements are going to be and preparing accordingly. For example, it is known that the peak movement of wheat, flour and mill products ordinarily occurs during August, September and October of each year. The conditioning and assembling of a liberal supply of cars in such loading districts so that the empties can be moved to loading points readily and without the necessity of handling them through terminals, permits a goodly proportion of such shipments to be handled with the minimum effort and at a time when the maximum tonnage of these commodities is being offered for shipment.

In districts where intensive loading requires special train service for the handling of empties, such train service should be so regulated as to permit the spotting of empties early each morning so that the loads may be picked up each evening for movement to assembling points where proper classification and consolidation should be made and trains operated on schedules consistent with the commodities being handled.

Of course, the co-operation of shippers in ordering cars promptly each day, and before a certain designated hour for the following day's loading, is essential to a proper consummation of the plan. This plan has been used for several years in the handling of perishable shipments on our heaviest district and has worked out very satisfactorily. It is also applied as far as possible to general handling.

Having a regular plan or lineup each day enables all concerned in the handling of trains to anticipate what is to be accomplished and prepare for it. To illustrate, if a certain terminal knows that at a certain time each day a certain number of loads are to be received, iced and blocked into classified trains, the work in the entire yard, at the ice house as well as the roundhouse, can be so lined up that the switching will be performed at that time; the icing plant will be prepared to perform its work and the roundhouse will plan its work so that the road engines will be available when the trains are ready to move.

With the terminal work properly lined up and each department co-ordinating, much will have been accomplished in increasing the carrying capacity of the road.

How the Capacity of One Division Was Increased

By Division Superintendent

Approximately six years ago I was appointed superintendent of a division of an important railway on which the heaviest business which had ever been handled up to that time was 950 cars per day in the direction of loaded movement. It was the belief of the officers of this road that this could not be exceeded. An examination of the records of previous years showed that the handling of the freight in extra rather than in scheduled trains resulted in the bunching of the power and crews at times with a heavy movement one day and a light movement the next. This resulted in serious congestion and delay. Trains were also delayed by the delivery of orders giving time on superior trains.

During 1917 the business did not shape right to accomplish any marked improvements in operation, but we made a careful and consistent effort to space our trains out of terminals properly, schedule regular freights so all of our men would know just how much time they would have for rest and recreation at their home terminals, and eliminate all unnecessary stops for orders or telegrams. As a result of these measures in May, 1918, with the same amount of power that had ordinarily been available during the two years previous we maintained an average eastbound movement of 1,020 cars per day while laboring under the serious handicap of having most of our younger train and enginemen in the army, and being obliged to employ any able man who applied for work.

without being too critical of age or previous experience. I attribute our success to certain features of operation that did not involve improvements in the property, but simply took greater advantage of facilities already available.

We formerly had train order blocks at all telegraph stations and towers, and if a passenger train was late the dispatcher would stop it and give it orders to run a certain number of minutes late. This time would also be given to all freight trains by "19" orders, frequently forcing a freight to stop at the order block, particularly on a grade, for a longer time than it was advanced by reason of the time given on the superior train. We did away with all of this by installing a middle or 45 deg. yellow indication of the train order signal, which, when displayed to a superior class train, gave notice that inferior trains were running on its time to the next open telegraph office. The inferior train, receiving the 45 deg. indication, would proceed at regular speed, regardless of the superior train, which was, of course, known to be late, or it was assumed that we wanted it to make a point ahead of the superior train. This simple device saved hours of freight train time and resulted in through passenger trains running over the entire division without having to stop for train orders. During the heaviest freight movement, the passenger train performance was better than ever before. In a winter snow storm, when passenger trains from connecting divisions were all late, the dispatchers simply put all blocks at train order offices at 45 deg. and the freight trains kept moving, or the snow plows kept going without the necessity of stopping for orders on double track.

Another practice we inaugurated was to place switchmen at the switches entering long passing tracks approaching the point of greatest congestion to avoid the necessity for long freight trains stopping and opening switches before pulling into clear, and again stopping to close the switches. This greatly increased the capacity of the line.

We had regular "talks" with the train dispatchers, bringing them into committee meetings with the fuel conservation people, while the engineers, conductors and brakemen had an opportunity at these meetings to bring up many matters relative to poor dispatching that had been weighing heavily on them while on their runs. Likewise the dispatchers and chief dispatchers had an equally good opportunity to say a few words about the poor "conducting" of trains. We always figured that these meetings helped to "increase the capacity of the line."

Summing up the various points that helped us out, without increase of facilities, and bearing in mind the fact that no two railroads or divisions have the same obstacles to contend with, I will conclude by suggesting that:

1. Regular freight crews with regular cabooses and engines and regular times to leave initial terminals keep the men satisfied and available at all times.

2. Train dispatchers should spend at least two days per month out on the line, looking over yards, riding local freights, etc.

3. Train orders should be restricted as much as possible and dispatchers trained to take up orders when they have been fulfilled. In other words, if a movement by an inferior train has been made and completed against a superior train prior to the arrival of the superior train at the train order point, then by all means take in the order and do not make the superior train sign it. Orders should be issued anticipating requirements, as far as possible, without waiting until the train is "coming close" or "calls for orders."

4. If possible don't stop a train to give it "authority to proceed." Keep it moving!

5. We should always remember that a satisfied and happy force of train dispatchers is a very necessary adjunct to a well-regulated division. Such a force radiates the same atmosphere over the road from one end to the other.

6. Yard offices, switchmen cabins, towers and engine houses should be conveniently equipped with local telephones. Many times a man having to use a telephone frequently is obliged by some thoughtless superior to walk across the room a dozen times a day to answer a poorly located telephone.

7. Educate the stevedores and stowers at freight transfers and freight houses to make up local freight cars properly to avoid delays to local freights when unloading peddler cars.

8. Encourage suggestions from every class of employees regardless of the department in which they may be working. This, I believe, is the most important point in railroad operation today.

Systematic Supervision of Details Brings Results

By J. H. Owen
General Superintendent of Transportation, Florida East Coast, St. Augustine, Fla.

One of the most vital factors entering into efficient operation is the intelligent handling of equipment, both loaded and empty. The importance of the proper handling of loaded cars is very apparent, but the handling and distribution of empty equipment is equally important, and a factor contributing in a great measure to congestion during periods of heavy traffic.

On this line we have centralized car distribution in the office of the general superintendent of transportation, where distribution orders can be given over the message telephone circuit to the division offices as needed, to meet ever-changing conditions. A wire report is made to the general superintendent of transportation at 8 a. m. daily, giving commodity loadings for the previous 24 hours according to classes of equipment, cars ordered for the succeeding 24 hours according to class and cars available to meet those orders. This plan insures the distribution of available equipment on the line according to the fluctuations of the movement of traffic, reduces to a minimum the use of power for the movement of empties and assures the use of refrigerator cars for commodities requiring that type of equipment, thereby tending to eliminate congestion at transfer points, which would result if unsuitable equipment was furnished for initial loading, necessitating transfer en route.

The same system is followed at the division headquarters where the car situation is reported by telephone at 2 p. m., or oftener each day by all agency points, which shows cars available for loading and orders for equipment to be used during the succeeding 24 hours. In addition representatives of the transportation and traffic departments are continually canvassing the territory served by this line, furnishing periodical reports of prospective car loadings, which enables the maintenance of a car supply adequate to, but not in excess of requirements.

We have put into practical use a method which insures heavier tonnage per car, and which has noticeably increased our average tonnage per car and average miles per car per day, thereby conserving the use of equipment. A daily report is made by each agency of the cars loaded, tonnage per car, shipper and routing to destination. These reports are carefully checked by the division chief dispatchers and the office of the general superintendent of transportation, and when it is noted that a car has not been loaded to 10 per cent over its marked capacity, or to the limit of its cubical capacity, the shipper is communicated with, and his cooperation solicited to make full and complete use of equipment applied on future orders.

Our trainmasters and road foremen of engines are constantly on the road supervising and directing the movement of the train and engine crews, eliminating unnecessary delays,

reducing delays due to mechanical defects in equipment and impressing train crews with the desirability of performing line of road switching efficiently and expeditiously, and educating conductors in the intelligent supervision of their crews.

Meetings are held twice each Sunday in the offices of the division superintendents of transportation, to which all employees are invited, primarily for the discussion of train rules and their practical application. These meetings are not confined exclusively to train rule discussions, but employees are invited to express themselves upon any feature of operation, and suggestions are solicited from them which will tend to improve and intensify operation.

The attention of engine crews is particularly directed to fuel economy, and a marked improvement has been noted since these meetings have been conducted, not only in expediting the movement of trains over the road, but in the consumption of fuel. As a "follow-up" of these meetings, the division officers, through their personal efforts, are lining up the men and enthusing them to exert themselves to the utmost in discharging their several duties from the standpoint of personal efficiency.

We have also revised our train rules, and no longer require engineers to sign "31" train orders, which saves valuable time at train order stations, and expedites train movements. Form "19" train orders are used to the greatest possible extent by train dispatchers, and our trick dispatchers are constantly encouraged by the chief dispatchers to issue only such orders as are actually essential to train operation, which corrects a condition prevalent among some dispatchers of issuing unnecessary orders. Our dispatching districts have been reduced to a size which can be handled most efficiently by one dispatcher, and the dispatching force is assigned to territories according to their individual ability and capacity. Short haul trains are carefully classified in station order before leaving terminals, to minimize line of road switching, and perishable freight trains carrying cars under refrigeration are so classified that the re-ice cars can be switched in one movement, which reduces terminal delays.

In preparation for the period of heavy traffic incident to the fall months, additional passing tracks and sidings are being provided, heavier power purchased and all rolling stock is being put through the shops in accordance with an intelligent and practical program, which keeps it to the highest degree of efficiency, and avoids costly delays through engine failures or other equipment defects.

Maximum efficiency cannot be attained, even with ample equipment and physical facilities, without the whole-hearted co-operation and enthusiasm of each individual employee engaged in transportation service, who should be inspired and encouraged by the example and supervision of his superiors. We are laying great stress upon this phase of transportation service to the end that every factor may contribute its quota.

How Delays Were Reduced at One Point

By B. J. Schwendt
Superintendent Signals, Toledo & Ohio Central, Columbus, Ohio

The average speed of freight trains on Class 1 roads is about 10.3 miles per hour, or a mile in a trifle less than 6 min. If this amount of time (6 min.) can be saved on each car every day, the equivalent of 100,000 additional cars will be available. Equating the time per mile to the cars in transit, and considering that the cars in the hands of shippers are standing still, it means about 7 min. to be saved per freight train per day.

A means of assisting in securing this saving by the more intensive use of existing facilities wth practically no changes except in state of mind and operating rules, but by merely operating trains in either direction on both tracks, has been in use on the double track in yard limit territory on the New York Central (Ohio Central Lines) at Columbus, O., since November 1, 1913. The economies are especially noticeable as compared with the old practice of single tracking by written train-orders and permits from the general yard master, as regular yard dispatching was not being used. The yard-permits usually required freight crews to take time out to call up over the telephone and to copy the permits (orders).

The congestion at Columbus was aggravated considerably by passenger trains doing their work, including switching and changing of engines, on the two main tracks at the Broad street station. The delays were particularly acute at passenger train time and during the morning and evening rush hours. Other methods of relief were considered, such as moving the passenger station and facilities, and providing station tracks, so that passenger trains could do their work clear of the main tracks. Consideration was also given to providing a third main track between the L. M. interlocker and Frankfort street, which involved additional bridge facilities over the Scioto river. Either of these schemes involved the expenditure of approximately $100,000 as the tracks in this vicinity are elevated, and additional right-of-way through a congested district would have been necessary.

Both Tracks Used for Traffic in Either Direction

The method of operation now used provides an efficient and inexpensive method of running traffic in either direction, on either or both of the two main tracks, between the adjacent interlocking plants by using the existing automatic and interlocking signals without written train orders. The new rules to towermen are as follows:

(1) See time table rule for train movements between L. M. and Frankfort street interlockers, Columbus, O.

(2) When routing trains or engines against the current of traffic between your towers, you will first check your indicators and then arrange with each other over the telephone before displaying signals for trains to make this movement. The towerman at L. M. interlocker, upon receiving word from Frankfort street that a train is to be run over the southbound track, will reverse signal lever No. 59, preparing for such a movement. The towerman at Frankfort street, upon receiving word from L. M. interlocker that a train is to be run on the northbound track, will reverse signal lever No. 4, preparing for such a movement. In each case the towerman, after reversing this lever, will not put same normal until he knows the train for which the signal was cleared has arrived at and passed the signal, the lever of which has been so reversed, except in case of emergency and delay, when the towerman has full information on the trouble.

(3) The towerman at Frankfort street will not allow a second train to go through against the current of traffic until after the first has cleared Town street and the towerman at L. M. interlocker will not allow a second train to go through against the current of traffic until after the first train has cleared Frankfort street interlocker. This makes the track between these interlockers, when used to run trains against the current of traffic, a positive block (manual block rules) except for shifting movements about Broad Street station and Frankfort street.

(4) The towerman will route trains with the current of traffic if at all possible and route them against the current of traffic only in actual cases of necessity.

(5) The towerman at L. M. interlocker will not route engines south from State street on the northbound track to work the Acorn or Hardesty tracks without making proper arrangements with Frankfort street to see if a northbound train has already accepted or passed signal 60-D, and the towerman at Frankfort street will not allow shifting movements on the southbound track north of Frankfort street without making proper arrangements with L. M. tower.

Double Track

All trains and engines will use tracks either with or against the current of traffic between Frankfort street and L. M. interlocking towers in accordance with and protected by fixed signals, observing Rule 99, (see Rule 663).

Conductors having work to do between these limits must inform the towerman at L. M. Tower before entering, and if delayed, they must immediately advise the towerman toward whom they are moving.

The present method of operation differs from the old only in that we have established in effect a manual block for movements against the current and allow the adjacent towermen to be governed by conditions as they find them to determine the necessity of reversing traffic, which they may do at will in a few seconds without necessarily slowing up or stopping trains. The levermen keep no block sheets by which to check the record of blocks occupied, or vacant, as continuous track indicators show this at all times and these indicators might be called "an automatic block sheet." By reversing the signal levers the mechanical locking in the existing interlocking machines prevents the towerman from erring by clearing an opposing or conflicting signal, and hence the arrangement is just this much safer than the ordinary manual block, and further requires no time of the busy towerman by writing, reading, or forgetting block sheets.

More recently the scheme has been extended 1.1 miles north between L. M. interlocker and the Baltimore & Ohio tower, a total of 3.2 miles being now operated under the traffic reversal system. Standard interlocking rules provide for movements with, or against the current inside of stop signal limits, disregarding superiority of trains; therefore by adding the above mentioned facilty between adjacent interlockers the entire territory covered operates as though controlled by a continuous interlocking plant.

It is estimated that the scheme above described, based on present train operation, saves about 150 passenger train hours, and 301 freight train and yard-cut hours a year. This counts only the delay to the individual trains reversed, when compared with the old method. The delays cannot all be reckoned, even where they affect only the train reversed, as without this scheme there would occasionally be a complete blockade, in which the delays would be indefinite to the train reversed as well as other trains.

Economies of Extending This System

On most roads where automatic signals are provided between adjacent interlocking plants in yard limits, or elsewhere, this arrangement of operating trains against traffic may be used, with perhaps the exception of furnishing track indicators if not already provided. The scheme may be used on single or multiple tracks without intermediate automatic signals by using the manual block instead where longer blocks will answer.

Additional safety may be secured by providing traffic levers and check locking. Where greater track capacity is required automatic signals may be installed in both directions but in any of the expanded schemes, from the simplest to the most complex, the same advantage of reversing traffic is secured, thus moving trains without avoidable delay by signal indication without written train orders, or time table superiority.

A few installations such as this should help to save seven minutes of freight train time per day. Better yet, if the running of trains by signal indication is extended to a full operating division, any time gained will more likely be conserved as compared with the scheme whereas time saved on any part of a division under efficient methods may be wasted on the remaining part under inefficient, or obsolete methods.

Speeding Up Individual Cars

By R. E. Barnes
Trainmaster, Central of Georgia, Atlanta, Ga.

Congestion starts in the terminals and as we now have no time to increase these facilities, the only thing to be done is to speed up the movement of cars through them. I am afraid that we are losing sight of the necessity of speeding up the individual car in our endeavor to reduce switch engine hours and yard expense. In the past it has been the endeavor of all to reduce yard expenses, to cut down the switch engine hours and increase the cars handled per engine hour. In doing this the yardmasters have allowed cars to lay on industrial tracks and in the yards until they could accumulate a full cut going to connections or they were forced to switch the industry. Many times a yardmaster will also allow empty cars to lay over in an industry for a day until he has loaded cars to go into this plant, making one trip serve the purpose. This, of course, causes him to lose the car mileage on these cars.

Transfers from one line to another should be made at least every 12 hours. If a loaded car moving 1,000 miles and passing over four different lines should lose 12 hours in being interchanged in each terminal, two car days would be lost. If interchanges are made only once in 24 hours this car would lose four days in interchange, which shows the necessity of prompt delivery of cars to connection on arrival as well as their prompt placement at industries.

In loading package cars to break bulk at transfer points, not enough thought is given to the loading of these cars to break at the farthest point. This causes congestion at the transfers, unnecessary handling of freight and delay to equipment in stopping at two or three transfers when the proper loading of the car would stop it only at one break bulk point.

Untold delay results from hay and grain shipments which are shipped "order notify." Hay and grain dealers order grain from the west and when it arrives at destination, having no money tied up in the contents of the car and facing a declining market, they find some technicality on which to refuse the shipment, claiming that it does not come up to the grade or there is some fault with the rate, with the result that the car may be tied up for two to six weeks before final disposition is given. At one terminal 120 cars of hay shipped "order notify" from Oklahoma were delayed at one time an average of 30 days each on different technicalities, such as not coming up to grade, hay too green or going through a heat, or the rates not being correct. One of the greatest steps to speed up the movement of cars, if it was possible, would be to do away with "order notify" shipments, as the consignee would then have his money tied up in the shipment and would naturally want to get the freight to enable him to turn his dollar over.

Prompt handling of hold tracks after freight is paid and the switching of cars from the hold track for delivery to consignees is another important step to move up cars.

It will require the united efforts of all terminal employees from the superintendent down and it will be necessary for each man to be keyed up to the highest pitch to enable us to speed up the movement of cars through the terminals to meet the situation which will confront us this fall and winter.

We should not reduce yard forces to the extent that will cripple yard operations, for while we may save a little in yard expenses, we lose a greater amount in car mileage and loss of equipment. It is much better to have a sufficient number of engines to move cars promptly and, especially when the consignee makes a special request, to be in a position to give him prompt service, for then you are in a position to call on him to speed up the unloading of cars.

The Main Tracker and the Peg System Will Help

By F. H. Peiffer
General Yardmaster, New York Central, Watertown, N. Y.

A chain is no stronger than its weakest link; likewise the capacity of a railway is dependent on its terminal facilities. Experience has proved that in the solution of the problem of increasing the capacity of existing plants the first question to be considered is that of relieving the already overloaded classification facilities.

The main tracker or solid train is the answer, but to be successful it should be handled as a system matter, first

analyzing the conditions as they appear at the more important terminals, and then going deep into the sources of traffic with the view of collecting the business at or near the points of origin. After this analysis has been completed, the question of division engine ratings must be considered, and the result boiled down to a point where schedules can be compiled and made effective. It may be necessary to hold certain traffic for a given point a considerable length of time until sufficient tonnage is accumulated to warrant a train, but the speed with which this traffic will move after being made solid will compensate for the initial delay.

There is no use of attempting to run fast or slow freights in a haphazard manner without regard to grouping, and expect to achieve the result which is possible by the establishment of solid train schedules. This applies to empty as well as to loaded cars. The amount of traffic offered by the shippers is dependent upon the empty car supply; therefore the question of grouping empty equipment into solid trains is very essential. After the main tracker is scheduled, a review of operating conditions leaving terminals is necessary to insure the prompt handling of the train after it is classified and dispatched from its initial terminal. The peg system of freight train operation is the means of insuring the desired result, as every condition affecting operation can be analyzed and a peg system put into effect which can be used by all concerned in operation as a yardstick whereby the every day requirements are before those whose business it is to keep trains moving. The combination of the main tracker and the peg system will insure the desired result of increased car miles per day, and ton-miles per train, decreasing the uncertainty of power which accompanies a system by which trains are ordered whenever sufficient tonnage is available. The peg system not only assists the operating department but also enables the motive power and car departments to arrange their forces to meet the requirements of the schedule, while the traffic department can present the schedules to shippers, as any man will buy from and patronize a concern which does business in an organized way as compared with one which has no systematic method.

Cabinet Discusses Rates

WASHINGTON, D. C.

THE IDEA of reducing freight rates on agricultural products, particularly export rates on wheat and flour, as a means of improving the condition of the wheat farmers, was discussed by the President and his Cabinet at their meeting on September 25, but without definite results. Secretary Wallace of the Department of Agriculture submitted to the President his report on a special study of the wheat situation and several suggestions, including rate reductions, were discussed by the Cabinet. It was officially stated on behalf of the President following the meeting that the subject is before the Interstate Commerce Commission to see what can be done, but it was pointed out that if rates are reduced railroads not now earning an adequate return would expect advances in other rates to offset any reductions in rates on agricultural products. The main difficulty, it was stated, is that some railroads make their living almost entirely from agricultural products and it would be very difficult to compensate them for their loss in revenue if those rates were singled out for reduction.

The statement that the matter is already before the commission undoubtedly refers to a letter urging such a procedure addressed to the commission on September 24 by Gray Silver, Washington representative of the American Farm Bureau Federation, asking 20 per cent reduction in export rates on wheat and flour. The letter stated that the price on American wheat is made by competition in the European market and that one of the principal causes for the low prices of grain is that 30 per cent of the price received at the primary market is turned over to the carriers for freight charges. Cutting down these costs, he said, would enable larger quantities of wheat to move abroad, thereby reducing the surplus which is holding down the prices in this country. He also expressed the view that the rates on wheat for export are too high in proportion to those on other commodities, but that it is possible that changes may take place in the future that will alter these ratios and that the farmers ask the reduction only for the present crop year.

No formal petition for such a reduction is before the commission, although it still has before it the western domestic rates on grain in the undecided Kansas grain case.

President's Attitude on Consolidation Not Determined

WASHINGTON, D. C.

BY WAY OF COMMENT on various published reports as to the attitude of President Coolidge toward plans for railroad consolidation and proposals to amend the consolidation provisions of the Transportation Act, it was officially stated at the White House on September 19 that the President had not yet gone thoroughly into the particulars of the subject. It was added that as Senator Cummins has given particular study to the matter, the President would desire to confer with him, members of the I.C.C. and possibly others before formulating an opinion.

This statement was elicited particularly by a newspaper story to the effect that N. L. Amster of Boston, president of the Citizens' Railway League, who had called on the President on September 18 to discuss the question of railroad consolidations, had quoted the President as expressing a favorable opinion toward compulsory consolidation. In addition to the statement that the President had not definitely made up his mind, a spokesman for the President said that when people call on him it is usually for the purpose of urging their views upon him and that he generally takes the role of listener in the main, that such visitors are not expected to quote his views, but that since they sometimes undertake to do so, he must decline to assume any responsibility for such attempts purporting to represent him.

There has been a growing feeling in Washington, however, that plans for railroad legislation such as President Harding had tentatively advanced will not be pushed at the coming session of Congress, partly because the general improvement in transportation conditions has removed much of what appeared to be the need for them, partly because of more mature thought on the subject, and still more because it seems apparent that the next Congress will not be receptive toward constructive changes in the transportation law.

It is also understood that Senator Cummins has abandoned for the present the intention he had announced of working for an amendment to the law to make the consolidations to be proposed in the Interstate Commerce Commission's forthcoming plan compulsory and that he now has a plan for an interim period during which consolidations would be permitted if approved by the Interstate Commerce Commission. He was quoted in the Washington Star of September 24 as saying:

"I say frankly that I intend to introduce a bill for the amendment of that part of the Transportation Act of 1920 which relates to the consolidation of railroad properties. One of the features of that amendment will probably be that during the period allowed for voluntary consolidation no definite plan for consolidations throughout the country shall be required or promulgated, but that during that period all consolidations proposed by the railroads shall be subject to the approval of the Interstate Commerce Commission."

Illinois Central Builds Gravel Washing Plant*

Installation at Forreston, Ill., Substitutes Uniform Product for Coarse Bank Run Material

By W. A. Gelbach
Supervising Engineer, The W. J. Zitterell Co., Webster City, Iowa

A GRAVEL WASHING, screening and crushing plant, modern in all respects and unique in some respects, has recently been completed by the Illinois Central in an extensive gravel pit owned by it near Forreston, Ill., about eleven miles south of Freeport. A gravel pit has been in use at this point for many years; in fact, the railroad began loading cars by hand in this pit soon after the line was built 60 or more years ago, and for the last 30 years cars have been loaded here by steam shovel. Gravel from this pit has been used extensively by the road in the north and west.

The bank run of the gravel contains 20 per cent to 30 per cent of material more than 2½ in. in size, the size usually specified as the maximum for ballast and includes many boulders too large to be placed under tracks as ballast. When using the bank run of gravel as loaded by steam shovel, it was necessary, after loading and hauling this useless material to the job, to dispose of it in order to clear the right-of-way. This involved an additional expense. Experience has also shown that clean ballast affords a great saving in the expense of weeding track.

The deposit of gravel at this point extends from a minimum elevation of 30 ft. to 60 ft. below the level of the ground water to as high as 90 ft. above it at some points. Streams on two sides of the deposit prevent excessive variation in the level of the ground water. Hence, the floor of the pit where recent loading has been done, is approximately level and within three or four feet of the ground water line.

Invitations to bid on the construction of a washing, screening and crushing plant were sent out by the railroad in December, 1922. Bids were taken on two types of plants. In one the material was to be loaded into cars, hauled and dumped into a hopper and then elevated, screened and washed. The other scheme provided a dredging pump and the transportation of the material to the plant by hydraulic means, at which point it would be elevated, screened and washed further as desired.

View of the Gravel Washing Plant with the Barge in the Foreground and Storage Bins in the Background

The bids which were received showed the hydraulic type of plant to be of lower cost than the type using a steam shovel and pit trains. The hydraulic type of plant also presented the advantage of making available a large amount of gravel lying below the surface of the ground water, which could not be obtained with a steam shovel. Furthermore, the expense of stripping or removal of the clay and earth overburden, which would be incurred if a steam shovel was used, would be rendered unnecessary by a hydraulic plant.

In January, 1923, a contract was therefore let to the W. J.

*A paper read before the Western Society of Engineers, Chicago, on September 24.

Zitterell Company, Webster City, Iowa, for the construction of a hydraulic type of plant. The entire work has been executed under the jurisdiction of F. L. Thompson, chief engineer of the Illinois Central, and under the immediate direction of Frank R. Judd, engineer of buildings, assisted by C. I. Anderson, assistant engineer. The field work for the railroad has been in charge of L. S. Marriott, assistant engineer.

The W. J. Zitterell Company entered into a sub-contract with W. H. K. Bennett, Chicago, to furnish all plant machinery, to furnish and install all electrical equipment and to construct the barge with its dredge pump and other equipment, and the pipe line connecting the barge to the plant. Mr. Bennett also furnished the general design of the plant. The balance of the work, including the erection of the plant machinery, was handled by the W. J. Zitterell Company with the exception of the track and electric lighting work which was done by the railroad. All executive work of the W. J. Zitterell Company was handled by G. C. Mills, vice-president, and the engineering work for the contractor in both office and field by the writer.

Orders were placed for material and work was started on the plans immediately after the contract was awarded. Field work was delayed until April 2 by adverse weather, but it was pushed vigorously from that time despite continued bad weather as the railroad was particularly desirous to get the plant in operation.

The unit on which the production of the plant depends is a barge, 26 ft. by 60 ft., with its equipment. The principal item of equipment on the barge is a 12 in. centrifugal gravel

View of the Storage Bins and Elevating Equipment

pump direct-connected to a 400 hp., 2,300-volt motor with the intake through a Swintek traveling suction screen nozzle, 45 ft. long, on which a chain with manganese steel fingers performs the double duty of loosening the gravel and excluding boulders above 8 inches in diameter from the intake.

The barge is also provided with a hoist with four drums. Two of these drums are for use in moving the barge by means of cables anchored on the shore, while the third is for raising the suction nozzle and the fourth is for operating a spud on the rear of the barge, the purpose of which is to serve as an anchor to steady the barge while it is working or swinging. A 2 in. centrifugal pump, direct-connected to a 10 hp. motor, is provided for priming the gravel pump and also for providing a water seal for it while running.

The barge was launched in a pond of water where the gravel had formerly been dug below the water level. Immediately after launching, the barge was afloat in 2½ ft. to 3 ft. of water. Owing to a very dry season, the water subsided nearly 1½ ft. during the two months following, and by the time the heavy equipment was in place and ready for operation, the bottom of the barge was resting firmly on the mud in the bottom of the pond. The first pumping was done on June 28. At this time the water and gravel were delivered through two lengths of pipe to the bank in the rear of the barge, the water returning while the cutter ground its way deeply into the bottom of the pond. On June 30 the pipe line was connected to the plant and the first material was de-

A View of the Gravel Pit Before Operations Were Started

livered to the bins. The first car of ballast was loaded on the evening of July 3. As the pumping continued, the barge was moved ahead from day to day, until it was finally afloat in 25 ft. to 30 ft. of water.

The material passes from the barge to the plant through a 12 in. iron pipe line, which is carried on pontoons to the shore and from that point on stationary cribbing or on the ground to the plant. Provision is made for the movement of the barge and pontoons in the water by means of rubber sleeve connections placed occasionally in the pipe line between the barge and the shore.

The 12 in. pipe line discharges its load of water, sand and gravel into a steel trough, which is installed at an incline, and at the bottom of which a perforated plate with ⅜ in. slots is located. This perforated screen serves the purpose of removing the fine sand and most of the water. This de-watering and removal of excess sand is necessary for the proper working of the revolving boulder screen.

The boulder screen is equipped with a screen plate having perforations 2½ in. in diameter. The boulders retained by this screen are fed into an elevator which discharges into an elevated bin of about one car capacity. The bin discharges directly into a No. 6 crusher, which in turn discharges into the flume under the boulder screen and there the crushed material, together with the water, sand and all material from the boulder screen, passes on by gravity to a large concrete de-watering tank with twin compartments. The water which overflows from this tank returns to the pond where the barge is operating.

Two dredging elevators, one operating in each compartment of the de-watering tank, elevate the sand and gravel to the top of the machinery house or head-house, the floor of which is 62 ft. above the tracks. These elevators discharge into steel chutes, which deliver the sand and gravel into the revolving screens.

Two lines of screens with three screens in each line are

used. The screens are 36 in., 54 in. and 96 in. in diameter and have perforations of 1¼ in., ¾ in. and 5/16 in. respectively. The water and sand from the finest screens pass onto the sand launders where the sand is either turned in with the mixed stone to produce ballast or separated as desired for torpedo sand, engine sand, etc.

Five tanks or storage bins have been provided. These bins present a new departure in sand and gravel plant constructions. They are of reinforced concrete with an inside diameter of 21 ft. and 9 in. walls. The reinforcing consists of 12 vertical, ½-in. round bars in each bin, and horizontal circular bars ranging from ¾-in. round bars on 4 in. centers at the bottom of the 40 ft. bins to ½-in. round bars spaced 9 in. centers at the top of the bins. These were

View of the Suction End of the Dredge

built with continuous pouring, using sliding forms in accordance with the established practice in grain elevator construction. Timber and sometimes steel plates are the materials usually employed for the bins of sand and gravel plants and these concrete bins therefore present an unusual appearance.

Three of these bins are 30 ft. high and two are 40 ft. high. Chutes from the screens are so arranged that the three sizes of stone may be run separately into the first three bins, or, by the use of butterfly gates, two or three of these sizes may be mixed in any one of the first three bins.

Six sand settling tanks or launders, tripping by gravity, are provided. Two of them are placed over the third or center bin, and are intended to produce sand without separation into sizes, which is turned into the third bin together with the three sizes of stone for ballast. The third bin, therefore, is the bin in which the ballast is made, as it is not possible to mix sand with stone in any other bin.

Two sand launders are placed over each of the fourth and fifth bins. When ballast is being produced, all sand is run into the launders over the third bin. When separated sand is desired, the gates of these launders are closed and the sand is washed over stationary screens over the launders supplying the fourth bin. The balance of the material then passes into the launders over the fifth or last bin. Fine sand is, therefore, obtained in the fourth bin and course sand in the fifth bin.

Material which is pumped to the plant usually arrives in a well washed condition. The dredging elevators carry up quite a quantity of water, which is sometimes sufficient for washing the material through the screens and sand launders. However, when the gravel is running a large per cent of fine material, additional water is required in the screens and in the spouts leading to the sand launders. This water is obtained from a well 10 ft. square and about 33 ft. deep. A centrifugal water pump direct-connected to a 100-hp. 440-volt motor is located in this well, about 11 ft. below the top of the ground and 5 ft. above the water level.

The trackage at the plant consists of a 60-car yard for empty cars, a 70-car yard for loaded cars, a loading track each side of the plant, and a passing track for removing loaded cars. The empty cars are started in the yard on a 1 per cent grade and dropped on this grade to the plant where they are stopped on a 0.5 per cent grade, loaded, started again by means of a car puller, and dropped down another 1 per cent grade to the load yard. The loads are taken out by a locomotive over a direct lead past the plant and empty car yard to the main line.

A combination office, storehouse and shop building, 18 ft. by 64 ft., was provided, giving an office space approximately 12 ft. by 17 ft., a storeroom approximately 17 ft. by 28 ft., and a shop approximately 17 ft. by 24 ft.

Electric power is obtained from a power line which parallels the Illinois Central tracks at this point. A 2,300-volt line from the power company's sub-station delivers power to the plant. This line is carried to the barge by means of a specially insulated flexible cable carried on tripods on the shore and supported on the pipeline pontoons over the water. A reel house is provided near the plant, housing a triple reel on which the three phases may be rolled up during the winter months while the plant is idle, or on which extra lengths of cable may be wound. A transformer on the barge

A View of the Screens

provides 440-volt current for all motors except the main pump motor and a transformer located near the plant provides 440-volt current for all motors used there. All motors are provided with the latest approved type of controllers.

Motors are used on the plant as follows:

On the barge—	1—	400-hp.	2300-volt on gravel pump.
	1—	15-hp.	440-volt on hoist.
	1—	15-hp.	440-volt on nozzle cutter chains.
	1—	10-hp.	440-volt on priming pump.
At the plant—	1—	100-hp.	440-volt well pump.
	1—	50-hp.	440-volt crusher.
	2—	40-hp.	440-volt main elevators.
	2—	25-hp.	440-volt screens.
	1—	15-hp.	440-volt boulder screen and elevator.
	1—	7½-hp.	440-volt car puller.

The electric lighting installation, which was made by railroad forces, is very complete and effective. Six large flood lights on the machinery house on the top of the plant illuminates the vicinity of the plant and the empty and loaded car yards. Three flood lights on the barge give the operator advantageous working conditions and one of these lights may be adjusted to light up the pipe lines.

The operation of the plant was taken over by the railroad on July 1 and is being operated by the maintenance of way department. Work on a night shift was begun on July 31.

The force required to run the plant, based on running a day shift only, is as follows:

1 superintendent—directing.
1 assistant superintendent—office work, billing cars.
1 barge man—pumping.
1 barge helper.
1 screen tender.
1 man on crusher, boulder screen, etc.
2 men loading cars.
4 men running cars (empties and loads).
1 man on car puller.

The rated output of the plant when in full operation is about 50 cars per day of ten hours.

Freight Car Loading

WASHINGTON, D. C.

TOTAL REVENUE car loading for the week ended September 15 was slightly less than that for the week before Labor Day because of the practical cessation of anthracite mining, which accounts for some 40,000 cars a week, but the total was 1,060,580, an increase of 123,359 cars as compared with the corresponding week of last year and of 208,028 cars as compared with 1921. From now on comparisons with last year will be made with the period following the settlement of the coal strike of 1922. Coal loading during the week of September 15 amounted to only 171,830 cars, an increase of only 370 cars as compared with last year. Miscellaneous freight, however, showed an increase of 53,280 cars and ore an increase of 23,083. Loading of grain and grain products was approximately the same as it has been for several weeks.

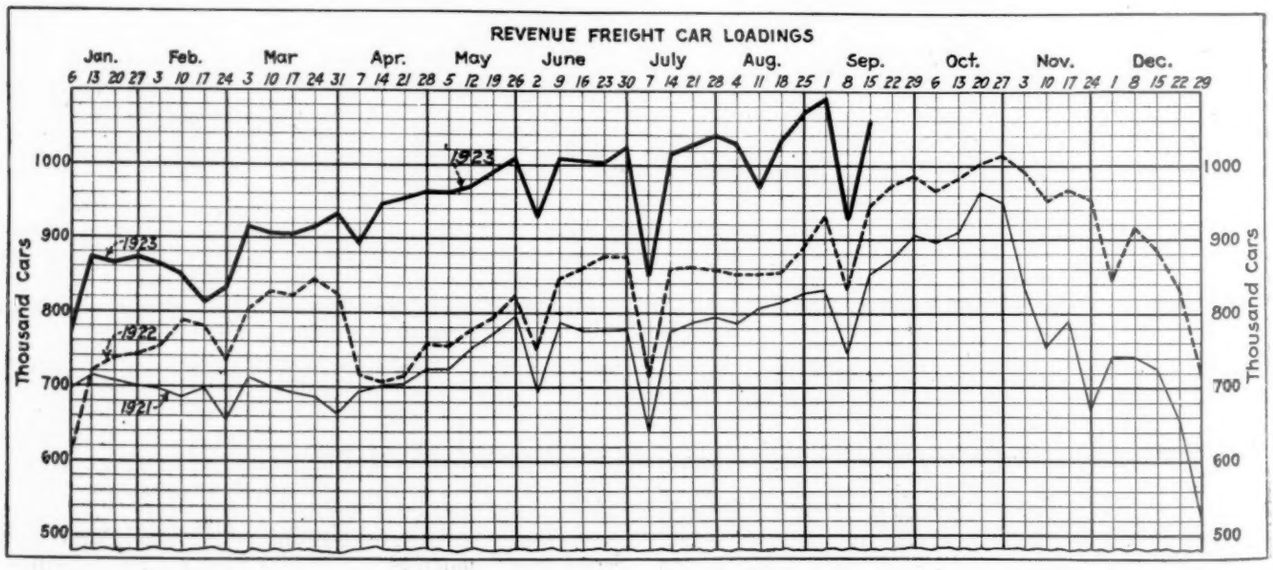
The freight car surplus for the week ended September 15 averaged 69,080 cars, while the shortage averaged 12,245 cars.

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, SEPTEMBER 15, 1923

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L. C. L.	Miscellaneous	Total revenue freight loaded	Corresponding period	
										1923	1922	1921
Eastern	1923	8,491	3,414	34,310	3,783	5,845	7,215	67,911	101,420	232,389	.....	.....
	1922	8,069	3,208	47,874	1,491	5,527	5,945	65,649	93,700	.....	231,463	207,190
Allegheny	1923	3,135	3,273	48,523	6,433	3,568	13,188	50,362	90,812	219,294	.....	.....
	1922	2,971	3,175	50,260	3,647	3,458	9,129	49,438	78,170	.....	200,245	169,406
Pocahontas	1923	315	290	28,160	494	1,909	118	5,737	5,243	43,266	.....	.....
	1922	245	326	17,044	156	1,177	42	5,022	2,954	.....	26,966	30,799
Southern	1923	3,987	2,357	25,157	1,256	24,153	1,789	40,590	41,722	141,011	.....	.....
	1922	3,294	2,460	19,503	807	17,096	1,145	35,967	36,494	.....	116,766	120,512
Northwestern	1923	19,294	10,091	10,623	1,265	18,338	50,483	31,733	41,841	183,668	.....	.....
	1922	18,932	8,774	8,640	1,350	16,059	34,472	29,465	33,350	.....	151,042	126,334
Central Western	1923	14,445	16,354	19,003	339	12,118	3,343	36,298	66,133	168,033	.....	.....
	1922	14,179	13,668	20,450	494	8,707	2,366	34,592	58,244	.....	152,700	133,849
Southwestern	1923	4,795	4,006	6,054	134	8,829	525	15,631	32,945	72,919	.....	.....
	1922	4,055	3,285	7,689	128	4,906	479	13,573	23,924	.....	58,039	64,462
Total, West. dists	1923	38,534	30,451	35,680	1,738	39,285	54,351	83,662	140,919	424,620	.....	.....
	1922	37,166	25,727	36,779	1,972	29,672	37,317	77,630	115,518	.....	361,781	324,645
Total all roads	1923	54,462	39,785	171,830	13,704	74,760	76,661	249,262	380,116	1,060,580	.....	.....
	1922	51,745	34,896	171,460	8,073	56,930	53,578	233,703	326,836	.....	937,221	.....
	1921	55,170	30,098	165,511	4,833	46,499	28,348	229,747	292,346	.....	.....	852,552
Increase compared	1922	2,717	4,889	370	5,631	17,830	23,083	15,559	53,280	123,359	.....	.....
Decrease compared	1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Increase compared	1921	.....	9,687	6,319	8,871	28,261	48,313	19,515	87,770	208,028	.....	.....
Decrease compared	1921	708	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
September 15	1923	54,462	39,785	171,830	13,704	74,760	76,661	249,262	380,116	1,060,580	937,221	852,552
September 8	1923	46,782	35,716	152,996	13,543	66,256	71,694	217,670	324,201	928,858	823,247	749,552
September 1	1923	54,604	39,201	206,610	13,970	77,279	78,193	246,984	375,726	1,092,567	923,806	831,288
August 25	1923	54,950	36,413	203,076	13,513	77,957	77,918	244,265	361,840	1,069,932	879,902	828,883
August 18	1923	52,521	33,150	189,073	13,587	77,299	80,759	241,238	348,114	1,035,741	846,266	815,147

Compiled by the Car Service Division, American Railway Association.



"He Profits Most Who Serves Best"*

This Rotary Club Motto Is the Principle Underlying the Employee Representation Plan

By General W. W. Atterbury
Vice-President in Charge of Operation, Pennsylvania Railroad System

TO THE AVERAGE PERSON, the Declaration of Independence enunciates his rights, and each views a situation on a question of his rights with a large capital "R." He ignores, for selfish reasons, the individual duty that that same Declaration of Independence imposes on him. The last clause of this great document reads as follows: "And for the support of this Declaration, with a firm reliance on the protection of Divine Providence, we mutually pledge to each other our lives, our fortunes, and our sacred honor." The epitome of this is "He Profits Most Who Serves Best."

Secretary of Commerce Hoover announces himself as an American individualist, and his platform is as follows: "Our individualism differs from all others because it embraces these great ideals; that while we build our society upon the attainment of the individual, we shall safeguard to every individual an equality of opportunity to take that position in the community to which his intelligence, character, ability, and ambition entitle him; that we keep the social solution free from frozen strata of classes; that we shall stimulate effort of each individual to achievement; that through an enlarging sense of responsibility and understanding we shall assist him to this attainment; while he in turn must stand up to the emery wheel of competition." I endorse his platform because the fixed ideal of American individualism is equality of opportunity.

The study of human relations is an exceedingly interesting one and when it is practically applied to that great subject of labor and industry, it is perhaps the greatest problem of our day. Only through its right solution can we hope to maintain that American individualism which has made the United States the greatest country in the world and the house of refuge for all other nations.

A Serious Problem

As a result of the war and governmental operation, the railroad industry in this country, particularly the relationship between officers and employees of the individual roads, had arrived at the state of "frozen strata of classes." There was no individualism whatever, nor an opportunity for the individual. With the return of the railroads to their owners, the relation between the Pennsylvania Railroad and its men was probably the most vital problem that we had to solve.

I wonder if you realize how serious this problem was. We have in our system at the present time about 240,000 officers and employees. They embrace practically every trade, skilled or unskilled, every form of office work and practically all of the recognized professions. They include men and women of 48 nationalities and speaking nearly as many different tongues. They are spread over a belt of country from the Mississippi river to the Atlantic coast and from the Great Lakes to the Capes—a territory presenting widely varying conditions in living and living costs, in climate, in customs and characteristics of the people. For the most part they are divided into comparatively small groups in or near more than 1,000 communities, strung along some 10,000 miles of railroad line.

The happiness, well-being, contentment, opportunity in life of all these workers and those dependent upon them rests chiefly upon one thing, and that is the establishment of fair and honest relationship between the workers and the transportation enterprise through which they earn their support. Thus, from a human standpoint, if from no other, we are dealing with a very big and important question, and unless it is settled right, the public, which after all is our employer, will not receive the service to which it is honestly entitled.

So far I have been speaking of the Pennsylvania Railroad System alone. The railroads of the country as a whole have two to two and one-half million employees, who with their direct dependents make up an army of probably eight million people. Surely no argument is needed to prove that the maintaining of right relationship between these people and their employers is in the highest sense a matter of national concern. On our road alone we are paying out over one million dollars a day in wages. The payrolls of all the railroads of the country probably run up to ten million dollars a day. You, as representing the general public, supply this money.

How to Provide Cheaper Transportation

When you travel or ship on our line, 51 cents out of every dollar you pay goes to wages. You have a right to know something about how and where and why that big slice of your dollar is spent and to expect some reasonable assurance that you are getting a fair equivalent in promptness, courtesy and efficiency of service. You have a right to feel sure that the portion of your dollar that is spent on wages is not unreasonably large. You have a right to look to the management to safeguard your interest in this respect, but it is equally the duty of the management to assure its employees a fair wage schedule, just working conditions and an opportunity to live according to our American standards and always maintaining American individualism and equality of opportunity.

If we achieve cheaper transportation in this country, it must come through greater efficiency; greater production at less cost. The efficiency of the machine as a whole depends upon the efficiency of the individual, and this can only be brought about as a result of whole-hearted, loyal and willing service. This implies no thought of hardship to the worker or the impairment of just and fair wage schedules, or the lowering of living standards.

It is true that railroad wage schedules must have reasonable flexibility and respond in a fair measure to general price levels. But, in my judgment, better team-play, finer loyalty and more whole-souled devotion of the worker to the job by which he makes his living are more important factors in lessening the cost of transportation service than are the wage schedules. You are vitally interested in this, and we have the right to ask that you assist us in bringing about these results.

To make the employee feel that "He Profits Most Who Serves Best," underlies our plan of employee representation, and our general policy in employee relationship on the Pennsylvania Railroad. We are giving the employee a chance to see that only a prosperous company can pay good wages, that the company's success is his success and its failure his

*From an address before the Rotary Club of Philadelphia, Bellevue-Stratford Hotel, September 18, 1923.

failure, and that men and management are merely two divisions of the same working forces.

Talking Over Differences As Friends

We are endeavoring to make them realize the truth that any conflict between men and management is an economic and moral wrong. As a substitute, we offer the plan of sitting down as friends and talking over to a common understanding any differences that may arise. That is all our employee representation plan consists of. It is simply the old-fashioned across-the-table conference, by which from time to time fair and reasonable men have been able to adjust their differences.

It would have been physically impossible to have called all of the men of the various classes into conference, because they run up into the thousands, so we asked the various crafts and classifications to hold elections and choose from among themselves, by secret ballot, their representatives to meet the representatives of the management. Then, in cooperation with the employees we worked out wage schedules and working conditions, all in the spirit of "give and take" on both sides.

With the establishment of working conditions necessarily followed their application, and as a sequence individual cases of grievances were bound to arise. Therefore, a method was developed of hearing these individual cases and grievances promptly, with a system of orderly appeals from the division authorities on up. At the top for each craft we established a joint reviewing committee, virtually a court of last appeal, whose decisions are absolutely binding upon both sides. Each joint reviewing committee consists of an equal number of elected representatives of the employees and representatives of the management. Each side has equal voting power. A two-thirds vote is required to decide any case; the committee simply talks it out until two-thirds are convinced The chairmanship of the committee alternates every six months between the employee and management representatives. What the committee finally decides in any case is law.

That, in a nutshell, is our employee representation plan. It has been in effect over three years. It works and is working better every day. It has the enthusiastic support of a large majority of our employees.

In the election of representatives recently held under our plan from 75 to 90 per cent of the men eligible to vote actually did vote. This is an infinitely better showing than is usually displayed by our citizens in national or state elections, and is a fair appreciation of the value that the men themselves attach to the right to vote.

Doesn't it seem a bit strange that the United States Railroad Labor Board should have so bitterly attacked our company for making this plan a success, particularly when you consider that the plan merely carries out what the Transportation Act told us to do—that is, to find a peaceful and workable means of settling differences with our employees?

Two elements have worked to make this plan a success; one is that the working forces on the Pennsylvania represent an exceptionally good class of citizens, and the other is that the plan itself is based on common fairness and justice that is mutual. Personally, I think we are only beginning to see the good that will eventually come from this plan through increasing mutual goodwill, friendly feeling and cooperation throughout our great body of workers.

Not An Anti-Union Movement

The employees of the Pennsylvania Railroad are a great family. We had made great progress before the war, but political control of the railroads for over two years set us back a long way. Now, as a result of hard work, I feel that we are making up lost ground, and are rapidly moving toward better things. It has been falsely charged that our employee representation plan is an anti-union movement. I strongly want to deny this. We are not fighting the right of our employees to organize, nor are we trying to destroy the existing unions. We are at this moment dealing with 100 per cent union committees, representing the signalmen, telegraphers and all the men in the engine and train service.

We do, however, strongly oppose certain uneconomic and un-American principles for which some unions stand. They are the closed shop, restriction of output and sympathetic strike. Take any one of these principles and apply the acid test of your motto, or size them up with the pledge that our forefathers took. We regard them as un-American and as aimed at the very fundamentals upon which our government is based. We regard any union which stands for those principles as being thereby and to that extent out of harmony with American institutions, and destructive of American individualism, the secret of our national life.

It may interest you to know that the train service brotherhoods, probably the strongest union organizations in the country today, have never advocated or countenanced any one of these practices. In a few words, that sums up our viewpoint of unionism and our general policy toward organized labor. I need hardly add that our employee representation plan not only recognizes the rights of collective bargaining, but is primarily based on it.

Why the Plan Succeeds

Our one object has been to develop such a spirit of cooperation between officers and employees as will result in good and efficient service to the public, and at the same time give to the employees all they can reasonably and fairly expect in wages, working conditions and the other surroundings that would satisfy a man's ambition for himself and his family, and to give every man an opportunity, through the employee representatives of his own selection, in deciding questions affecting his wages, working conditions and other matters of mutual interest and our service to the public.

We do not claim that we have found the only solution to the problem. We do know that we have found faith in each other that has been justified as time goes on. We have, as a result, settled amicably, to the mutual satisfaction of both officers and employees, such fundamentally important questions as wages, schedules of working conditions, piece-work prices, questions of discipline and discharges, all of which in the old days proved vexatious and troublesome, and for which there had been no systematic method of solution.

Mutual confidence, facts mutually established and joint conferences to determine what the facts mean and how they shall apply—these are the fundamentals, and the questions growing out of industrial relations may be attributed generally to the lack of one or more of these factors. We have not discovered anything new. We have merely adopted a practical commonsense understanding that the best way to settle disputes is to trust each other, to find out what the facts are and then to sit down around a table and talk them over in a frank and friendly fashion.

As to the success of the plan, there is no room for doubt—both officers and employees have come closer together and they have come to understand better each other's problems and to see the other fellow's point of view. The disputed questions are taken up and settled promptly and what is more significant, more than one-half the questions that arise are settled right on the ground locally between the employee representatives and the immediate superiors of the employees concerned.

An Ordinance has been presented to the board of aldermen of St. Louis, Mo., which prohibits the use of steam locomotives within the city limits of St. Louis, after January 1, 1926, and which carries a penalty of $100 to $500 for each violation of the rule. The measure is part of the anti-smoke crusade recently launched by various civil organizations.

N. Y. C. Plans New Niagara River Crossing

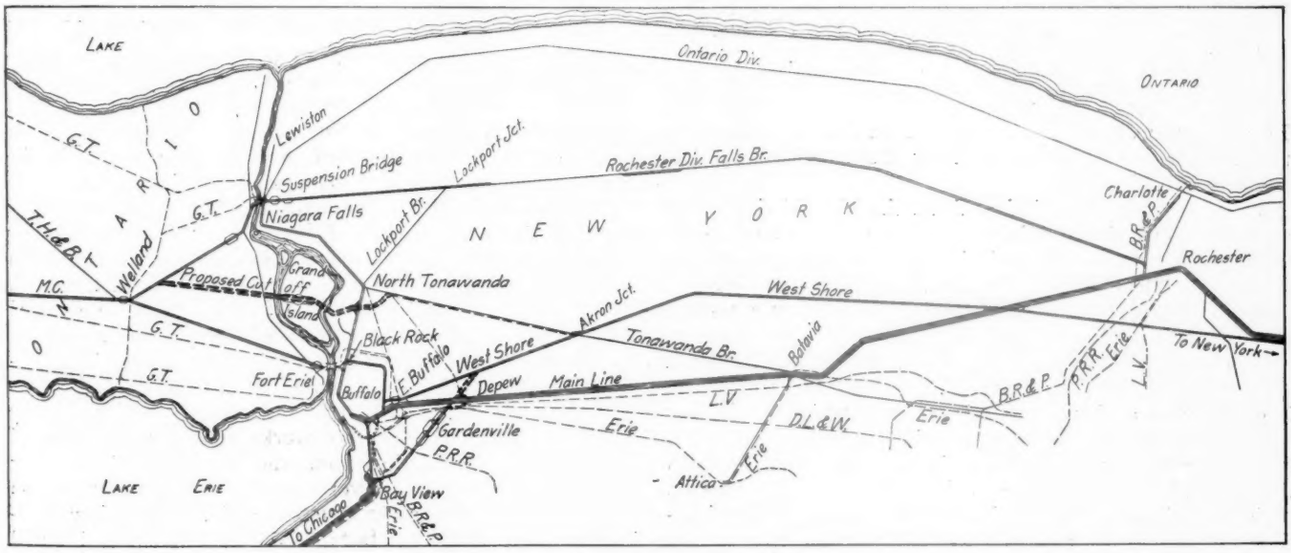
A Twenty Mile Connection Will Greatly Increase Capacity Through Buffalo Gateways

A PROJECT for the construction of a new double-track railroad about 20 miles long, including a new crossing of the Niagara river about midway between Buffalo and Niagara Falls, is the latest step to be announced by the New York Central System in its plans to meet the requirements of its rapidly growing traffic. It is being undertaken jointly by the New York Central and the Canadian Pacific, and extends from a connection with the existing line of the Michigan Central near Welland, Ontario, crossing the east and west branches of the Niagara river and Grand Island to a connection on the American side with the Niagara branch and the Tonawanda branch of the New York Central near the city of Tonawanda, N. Y.

Two corporations have been created for the purpose of carrying out the project, the Canadian Niagara Bridge Company for the section of approximately 9 miles in Canada, and the American Niagara Bridge Company for the 11 miles on the American side of the International boundary. The last-named company will also be responsible for the construction of a large classification yard on Grand Island.

At the present time the traffic for the New York Central moving through the Niagara and the Buffalo gateways is carried to Welland over the main line of the Michigan Central, and over the Toronto, Hamilton & Buffalo, a line owned jointly by the New York Central, the Michigan Central and the Canadian Pacific. From this point the Michigan Central has two lines, one a double-track line extending northeasterly and crossing the Niagara river at Suspension Bridge and the other crossing the Niagara river on the so-called International bridge of the Grand Trunk, connecting with the railroads on the American side at Black Rock, near Buffalo.

On the American side of the river a large part of the traffic crossing at Suspension Bridge moves east over the Falls branch of the Rochester division of the New York Central to a connection with the New York Central main line at Rochester. The Tonawanda branch of the Rochester division also extends from a connection with the Niagara branch at North Tonawanda to a connection with the West Shore at Akron Junction, but this branch is at present little used because, among other reasons, connection with it to and from the west has to be made over the congested Niagara branch, either from Suspension Bridge or Black Rock. The Niagara branch, which is a double track line between Buffalo and Suspension Bridge, carries a heavy traffic. From North Tonawanda to Suspension Bridge it carries traffic of the Lehigh Valley in addition to the New York Central business and has an average daily movement of about 50 passenger trains and about 30 freight trains. From Black Rock to Tonawanda it has an average daily movement of about 48 passenger trains and about 14 freight trains. The capacity of the Niagara branch is also limited by an awkward connection with the bridge over the gorge at Suspension Bridge,



The Proposed New Niagara Crossing

which requires all trains passing from the bridge to this branch or vice versa to back around a wye.

In addition to the routes mentioned above there is the West Shore, extending from East Buffalo, with a double track line that is not now used to capacity on account of the lack of suitable through connections to it. These various arteries of traffic of the New York Central are in addition to its four-track main line which passes through Buffalo and carries a heavy traffic. On the portion west of the Buffalo gateway the daily average is about 50 passenger trains with about 50 freight train movements, while that on the portion to the east of Buffalo is about 68 passenger trains and about 40 freight train movements.

At the present time two railroad bridges are available to the New York Central Lines crossing the Niagara river between the United States and Canada. One is the cantilever bridge of the Michigan Central at Suspension Bridge, now being replaced with a new steel arch double-track structure over which a heavy traffic moves between the New York Central, the Erie and the Lehigh Valley on the east and the Michigan Central and the Pere Marquette on the west, the daily movement being about 16 passenger trains and about

30 freight trains. The other is the International bridge owned by the Grand Trunk which crosses the Niagara river between Black Rock in the northerly part of Buffalo and Bridgeburg. This is an old bridge, part of which has only a single track. The traffic crossing this bridge has become extremely heavy and has increased to a point beyond efficient and economical operation. During periods of heavy traffic as many as 98 passenger trains and about 90 freight trains cross the structure daily. This traffic moves between the New York Central; the Delaware, Lackawanna and Western; the Erie and the Pennsylvania on the east; and the Michigan Central, the Pere Marquette, the Grand Trunk, and the Wabash on the west.

The large industrial development at Black Rock makes it impossible to expand the present yards beyond their limits as now fixed and the operation of those yards is hampered by the existence of three street grade crossings so that serious delays occur in the handling of traffic. Frequently during times of heavy traffic over 2,300 cars are handled per day at the Black Rock yards of the various railroads, which yards have a standing capacity for only approximately 1,600 cars.

Buffalo and the Niagara frontier constitute the "bottleneck" through which the great volume of the New York Central Lines' freight must pass between the west and the seaports of New York and Boston. It is also the gateway to Toronto and the Canadian Northwest. In addition to the freight movement of the New York Central, there is a heavy interchange between that system and other railroads and also between the New York Central and the lake steamship lines. In 1919 over 31,000,000 bushels of eastbound grain were transferred from ships to the New York Central rails at Buffalo.

With the above facts before them, the New York Central authorities have been endeavoring, for a long time, to develop a program for the relieving of its busy main line through the state of New York by the construction of detour lines for the by-passing of through movements around important gateways to facilitate handling traffic at the large centers and by the construction of connecting lines to obtain greater use of the double track West Shore Railroad. An important part of this program is the construction, now under way, of the Hudson River Connecting Railroad, forming a connecting link south of Albany between the main line and the West Shore west of the Hudson river and the Hudson division and the Boston & Albany to the east. The situation has been met to a degree at Buffalo by the construction of the Terminal Railroad of Buffalo, extending from Blasdell, a point on the main line southwest of the city, to Depew on the main line east of the city and consisting of a double-track detour line about 10 miles long with large classification yards at Gardenville, designed to handle the through movements around the city. Another part of the general program is a connection now contemplated from the main line at Depew to the West Shore, involving the construction of a new line about two miles long, making the West Shore Railroad available for the movement of some of the through traffic received over the detour line of the Terminal Railroad of Buffalo.

The construction of the American Niagara Railroad is another natural part of this program in order to pass through business to and from the Michigan Central around the congested portion of the Buffalo gateway. This will be accomplished by routing the traffic over the new line and bridge to Tonawanda Junction and over the Tonawanda branch to Akron Junction and thence to the West Shore, making that double track line available for a heavy tonnage, whereas it now carries but little traffic. The Tonawanda branch will be double-tracked and the grade reduced to 0.25 per cent eastbound for the handling of this traffic. The new line can also be used to advantage for certain traffic now moving on a round-about route over the "Suspension Bridge" crossing, including the traffic of the Lehigh Valley which moves over the New York Central under a trackage arrangement and perhaps also the traffic of the Erie by means of a connection that may be made with the Erie just south of Tonawanda. The distance over the new line will be about 6½ miles shorter between Tonawanda Junction on the east and Welland on the west than over the route via Suspension Bridge. Operations between the east and west will also be expedited by the new line because its use in conjunction with the Tonawanda branch and the West Shore will afford a route for heavy tonnage movements on a lower grade than via the present routes. The maximum grade on the new route will be 0.3 per cent eastbound as compared to existing grades of 1.0 per cent eastbound on the present routes between Welland, Ont., and Rochester, N. Y.

The new line will relieve the main line of the New York Central of a considerable amount of freight traffic and will, in connection with the distribution and assembling of freight traffic in the new yard to be provided on Grand Island, improve the movement at Black Rock, and East Buffalo, and shorten the time for the transportation of freight between the East and the West. To the extent that the new line will relieve the existing railroad facilities, these facilities will be more capable of serving the local needs of Buffalo with its constantly increasing industrial development.

The portion of the new route on the American side will consist of a double-track railroad 10.36 miles long, the maximum grades on which will be 0.43 per cent westbound and 0.25 per cent eastbound, compensated, with a maximum curvature of three degrees.

While the plans for the bridge structure are now in the course of preparation and are only preliminary, subject to the approval of the Secretary of War, it is planned to carry the new line over the easterly branch of the Niagara river by means of a nine-span steel structure of through Warren truss design. Eight of the spans are to be fixed and each 205 ft. in length with a movable span over the channel 190 ft. in length of a direct vertical lift type, allowing 156 ft. of clear channel and 110 ft. vertical clearance. The substructure will consist of concrete piers on pile foundations except for the lift spans, the substructure for which will be carried to rock. The bridge will provide for two railroad tracks on a timber deck designed for Cooper's E-70 loading with a vehicular roadway of concrete floor construction on one side designed for 15-ton trucks and 50-ton trolley loading and with a walkway for pedestrians. The new line will cross all highways and existing railroads at separated grade. The development in the large hump classification yard on Grand Island contemplates receiving, classification and departure yards of an ultimate capacity of 10,000 cars. The yard improvement will include two modern engine houses with about 32 stalls each, with modern machine shop, blacksmith shop and repair facilities, together with a 1,000-ton reinforced concrete coaling plant, sanding and ash handling facilities, the latter of the circular wet ash pit type. The ultimate yard layout for eastbound movement will consist of 10 tracks of 110 cars capacity for the receiving yard; 32 tracks of 50 to 100 cars capacity for the classification yard, and 10 tracks of 110 cars capacity in the advance yard. A similar and symmetrical layout is planned for the westbound movement.

That part of the new route incorporated as the Canadian Niagara Bridge Company will consist of a double-track railroad extending from a connection with the American Niagara Railroad at the International boundary westerly for a distance of 8.85 miles to a connection with the Michigan Central a short distance east of Welland, Ont., with a tangent alinement for the entire distance and a maximum grade of 0.25 per cent in each direction.

With the exception of the bridge over the westerly branch of the river, the construction work on this line is compara-

tively light. The preliminary plans for the bridge structure over the west branch of the Niagara river contemplate a main steel superstructure of 15 main spans. It is being planned to consist of 12 spans of semi-through Warren type trusses of 160 ft. each; 2 through truss spans of 205 ft. each, and a direct vertical lift span over the channel of 196 ft., providing a vertical clearance of 110 ft. The bridge will be designed the same as the bridge on the American side over the easterly branch, for two railroad tracks on a timber deck, designed for Cooper E-70 loading with a roadway for vehicular and trolley traffic.

Enabling legislation for both the Canadian and the American Niagara railroad corporations has been passed by the respective governments and applications for permission and approval to exercise the franchise of the American corporation and for a certificate of public convenience and necessity have been filed with the Public Service Commission of the state of New York and with the Interstate Commerce Commission. The Public Service Commission has recently granted that certificate. It will also be necessary for the plans of the bridges to be submitted to the Secretary of War and for financing to be arranged.

Recommend Government Regulation of Coal

U. S. Coal Commission Finds Same Public Interest That Led to Railroad Regulation

WASHINGTON, D. C.

CREATION OF A SPECIAL DIVISION in the Interstate Commerce Commission to exercise a considerable degree of administrative and quasi-judicial government regulation and supervision of the coal industry and to coordinate the work of other government bureaus relating to coal is recommended in the final report submitted to the President and Congress by the U. S. Coal Commission on September 22.

"The indispensable service which the coal mine performs," the commission says, "gives the large social value both to the property and to its product and in turn this social value in effect grants to the public an interest in that use and creates a compelling reason for public control and the practical logic that half a century ago clothed with a public interest the steam locomotive and in later years the electric power station must recognize a large element of public service in the coal mine that furnishes the necessary energy to both locomotive and power plant." It was added, however, that "the commission is passing here upon an economic fact and not upon the law."

The degree of regulation or supervision proposed does not extend to price-fixing, but contemplates governmental fact-finding and publicity, administrative correction of abuses and possibly a licensing system, as well as the exercise of the powers of the commission relating to freight rates and transportation service to discourage unnecessary long hauls of coal and the overdevelopment of the industry by the opening of too many new mines in order that the car supply may be concentrated when it can be used to the best advantage. In times of emergency it is also proposed that the Interstate Commerce Commission should act as federal fuel distributor.

The coal commission also suggests an excess profits tax on anthracite.

In outlining the reasons which led it to the conclusion that the time has come for the adoption of a new government policy relating to coal the report says in part:

> Absolute public necessity is back of the demand for continuous service from the coal mine and from every agency responsible for the transfer of coal from mine to place of use. Twice within four years both transportation and industry have been threatened with partial paralysis due to wage disputes in the coal industry. The dependence of our whole industrial structure upon the continuous production of coal has been too obviously demonstrated by these two instances to leave room for any further debate on the relation of coal to the public interest.
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> Bituminous coal enters into interstate commerce on a scale approached by no other commodity. Less than a fourth of the coal mined in the United States fails to enter interstate commerce either as railroad freight or locomotive fuel. Every one of the 45 coal producing districts in the United States, except the Michigan district, ships coal outside the state in which it is mined, and the neighboring coal state, Indiana, ships coal to 17 states although it receives coal from 17 mining districts in seven other states. Three hundred miles of cars loaded high with coal is the measure of the daily output of the bituminous mines of the United States and with that volume of traffic it is obvious that the uninterrupted flow of coal from mine to boiler room is a prime requisite to the general welfare. With storage at the mine necessarily exceptional and at best limited in quantity, it is commonly true that without its daily supply of railroad cars the mine does not start—thus closely is interstate commerce linked with coal mining. The daily rate of consumption is the proper unit of measure of bituminous coal, and so large is this daily requirement of the railroads and different industries, that in general it is impossible to accumulate stocks of coal sufficient to last as long as the stocks commonly carried of other raw materials. The two and three months' supplies of coal which the electric power stations and gas plants of the country now have on hand are exceptionally large and perhaps approach the practicable limit of stocks to be held in reserve simply as insurance against interruption of supply. Unfortunately, however, such stocks of coal are never evenly distributed among users so that in fact a stoppage of either the mining or the carrying of coal would within a few weeks threaten large cities in every state with industrial disaster, and even a temporary interruption may cause serious embarrassment.
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> The present extensive and unrestrained interstate exchange of foodstuffs and other commodities, which has so lessened the danger of either local shortage or local monopoly, is itself conditioned upon an unfailing supply of coal, the very lifeblood of interstate commerce. The common carrier soon becomes unable to perform its full public service if its supply of fuel is even reduced, and a railroad without coal would at once cease to function, whatever its legal duty under a public grant. Continuity of operation of more than a quarter of the soft coal mines of the country is demanded to keep the railroads themselves in operation; and the requirements of the public utilities would increase this quota to over a third. To that extent are coal mines directly essential to the operation of businesses that are universally recognized as clothed with a public interest. If these businesses can not be conducted without an ample and continuous supply of coal, obviously coal is affected with a public interest, arising from the clear and direct obligation to the public of continuous service not alone in the transportation of coal but in its production also, as there can be no transportation of coal without production of fuel—these two are inextricably bound together and constitute one agency of public service, for the coal is not mined until the railroad car for its transportation is set at the mine.
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> The public-welfare element in coal, then, is seen in the dependence of public health and safety on an unfailing supply of fuel, in the close connection between the prosperity of most industries and the uninterrupted operation of the coal mines, and in the obvious fact that without coal the great network of railroads which binds together this great country would be an idle, useless thing. It happens too that the railroads and the public utilities, themselves so clearly obligated to render whatever public service is demanded of them that the constitutionality of their public regulation is unquestioned, are of all industries most dependent upon coal. Thus, coal makes up over 35 per cent of the operating cost at the gas plant and over 25 per cent at the electric power station, and in the operating expenses of a railroad the cost of coal is the largest single item, next to labor.

An abstract of the principal part of the report containing its

recommendations as to the form of regulation to be adopted, follows:

The Function of Publicity

The first step toward protection of the public interest in the mining and marketing of coal as a continuous and efficient service is a better public understanding of the coal business. Guided by facts rather than rumors, by information rather than prejudice, the people will be able to exercise wisely the powers of the government over this type of private business to which society has given a larger value and special opportunity.

The government and the leaders of the coal industry both are blamable if the public has no proper conception of what coal means to the country, what conditions and handicaps have to be met in the mining and distribution of coal, what economies can be effected, what advance is needed and what can be done in bettering working and living conditions. On all of these subjects the public needs information and the industry needs publicity. Those in the industry who have expressed their purpose to take the American people into their confidence in the future by freely furnishing all the current information bearing on the relation of their business to the public interest surely can offer no objection to legislation providing specifically for that kind of publicity.

Use of Federal Powers

Both to protect the public and to promote the normal development of this great basic industry, the commission recommends the use of the powers of the federal government over interstate commerce, recognizing that under our constitutional system a substantial part of the responsibility rests on the state and local governments and should remain there, and an even larger part on the industry itself and the public which it serves. It is the aim of the commission in view of the facts presented in its reports not only to protect the legitimate interests of the industry but to utilize to the fullest extent the good will and resources of the industry itself in putting to an end the disgraceful evils which have developed and which we have described.

Existing organizations in the industry—of operators, miners, and dealers—furnish the natural point of departure for the reforms and improvements that are essential. When it became necessary to create a federal reserve system of banking, it was recognized that it could best be put into effect through the banking industry. The function of the government is that of supervision, with substantial powers of regulation. The same principle has been applied for a longer time to the railroads. This may be regarded as the characteristically American and constitutional method of dealing with such a national problem as is now presented in the coal industry. The commission has aimed to make such proposals as will increase rather than decrease the sense of responsibility within the industry. A legitimate pride in workmanship, in fair practice, in operating and commercial enterprise will be developed not by taking over from an industry its own natural functions and placing them in the hands of the government but by such measures as will insure public knowledge and will create public confidence that abuses are in a fair way to be removed, and that service is constantly improving. This means drastic regulation when necessary as a last resort for those who will not voluntarily give the service on reasonable terms; but it means also a reasonable attitude on the part of the government and the public towards investors who risk their capital either in operating or in marketing, and towards miners who risk their lives in a laborious and hazardous occupation.

The government can act only through administrative agencies, and it is clear that if anything is to be done at all commensurate with the gravity of the problem, an effective agency, with sufficient funds, experience and powers at its disposal, must be charged with the direct responsibility for such regulation and supervision as is necessary.

Administrative Agency Recommended

The commission is equally averse on the one hand to the unnecessary establishment of any new and unattached governmental agency and on the other to leaving this very necessary governmental responsibility to a haphazard collaboration of existing bureaus, whether in any one department, or in several departments. We believe that the logical and appropriate agency to exercise the necessary administrative and quasi-judicial functions required for the coal industry already exists in the Interstate Commerce Commission. We recommend the creation for this purpose of a special division in that commission.

The Congress of the United States is by the Constitution authorized to "regulate commerce among the several states." The railroads have already been declared to be interstate common carriers and to be within the regulatory power of the Congress exercised through lawful decrees of the Interstate Commerce Commission. The power to regulate involves the use of this means of transportation in the way that will best serve the interest of the several states of the Union. The regulation of commerce in coal among the several states involves the right to know the cost of its production, whether the investment on which a return is claimed is fairly estimated or inflated, and what profits are made by owner, operator, and dealer, and what are the earnings and working conditions of the miners.

Some of this information is already collected by existing bureaus. The commission believes that this fact-finding service must now be put on a permanent and well co-ordinated basis. It believes that the moral influence exerted through publicity is an important if not the only necessary safeguard of the interest of the public.

Publicity as to the quality of coal in interstate commerce will greatly deter unscrupulous operators and dealers from the sale of "fireless" and other adulterated coals. Publicity as to the costs and profits of the operators, transportation charges, the costs and profits of the wholesalers and retailers, will enable the consumer to judge whether a fair or an exorbitant price is being charged for his coal. Publicity as to the earnings, living conditions, and living costs of the miner will enable the public to form a judgment as to the equities of disputes between operators and miners over the renewal of wage agreements; and informed public opinion at such times will exert a deterrent influence upon the adoption of an unreasonable attitude by either or by both parties to the controversy and thus tend to prevent a lockout or a strike.

In times of prolonged suspension of mining, as in 1922, involving serious shortage of coal, the necessity of the most economical use of such coal as is available, and its equitable and efficient distribution after the resumption of operations, authoritative information will be of incalculable value in performing the functions which the federal and state fuel distributors have been attempting to perform, although with inadequate authority and facilities. In times of emergency the proposed division of the Interstate Commerce Commission would be ready to act as federal fuel distributor and subject to the direction of the President of the United States, the agency to deal with transportation and distribution as the emergency requires.

Co-ordination of Fact-Finding and Regulation

There should be some organic relation between the Interstate Commerce Commission, in the exercise of its regulatory powers over the coal industry, and the Geological Survey and other bureaus which already have experience and facilities for collecting any part of the information needed. The Interstate Commerce Commission itself should, however, create any necessary facilities for continuing the collection of current information which does not more appropriately and naturally come from these existing sources

Fact finding and interpretation of the facts would thus, with mutual advantage, be separated to this extent from executive action based on the facts. The Geological Survey, for example, might continue to gather systematically, publish currently, and interpret the facts about production, reserves, storage, etc., and could furnish special information within its field when called upon by the Interstate Commerce Commission to do so. The Bureau of Mines might have the whole responsibility of safety investigations, and for any necessary federal inspection of quality, etc. Investigation of labor disputes (not compulsory arbitration) might belong to any governmental agency which is charged with similar responsibilities in other industries.

The whole responsibility for the administrative correction of abuses, the regulative function, must be concentrated in one place. Our proposal is that this should be a special division of the Interstate Commerce Commission. The collection of information about finances, operating costs, etc., not having been undertaken heretofore by any other permanent agency would naturally belong to the Interstate Commerce Commission itself, and that body should have power to secure all needed information either from the original sources or from such bureaus as collect it.

All these facts change from season to season, and vary from district to district, and from mine to mine; and the public is entitled to know them. This commission does not advocate publicity about private affairs, but it holds that the transportation of coal in interstate commerce is so affected with a public use and that coal enters so intimately into all the necessities and conveniences of modern life that there is no longer any private right to secrecy as to such matters as costs, profits, wage rates, and working and living conditions.

Supervision and Regulation

The government must go beyond continuous fact finding and publicity, important and elementary as these functions are. The fundamental evil in the anthracite industry is that of monopoly—the treatment of limited natural resources as if they were like other private property. Reliance on competition without supervision has resulted in persistence of a permanent level of high prices above which extortionate increases were made whenever a suspension of mining or other disturbances give rise to the phenomenon of premium coal. In the anthracite industry, we have secured stability—which is desirable—but it has been at high cost to the consumer and has made anthracite a luxury fuel. The special report on anthracite discloses that together

with relatively low wages and unsatisfactory living conditions of many of the miners, including those who derive least benefit from the recent ten per cent increase in wages, there are excessive royalties and differential profits. Limitation of margins to a reasonable return on legitimate investment and the elimination of monopoly profits, whether in the form of royalties, operators' and dealers' margins, or freight rates, are perfectly reasonable demands of the public.

One remedy, short of price fixing or public ownership, remains in the hands of the government for the protection of the public interest. This is the levy of a graded tax on royalties and differential profits. This would not lower the price of coal, but it would secure a public revenue without increasing the price of coal. The present sales tax imposed by the state of Pennsylvania on anthracite gives no such protection, even though it yields some $7,000,000 to the state. Since it is a percentage on the f. o. b. mine price, it falls on the marginal high cost producer, as on others, and even more heavily when he is selling at a higher price, and is therefore passed on to the consumer in the form of still higher prices. An excess profits tax, as suggested above, under these monopolistic conditions, would not be added to the price of coal, and thus would not be passed along to the consumer, as it would fall only on those who have differential advantages. Thus, the federal taxes in the five-year period 1917-21, studied by the commission, were lenient to the low profit operator and bore more heavily on the high profit operator, the range being from 2 cents a ton on a non-dividend paying company to 28 cents on one of the most profitable companies.

The main remedy, however, against extortionate prices lies in the consumer himself. There are substitutes for hard coal and a readiness to resort to them is the ultimate and effective defense against an unreasonable price.

The mining and marketing of soft coal is the larger and, from the point of view of the national economic life, the more important industry, and here the fundamental evil is over-development, irregularity of operation and consequent enforced idleness of miners and of invested capital. This problem, like that of anthracite, can be solved only by the federal government, in co-operation with the industry, working on a national scale and with a clearly defined national policy. It is through the granting and withholding of transportation service through supervision that an equilibrium can be established between demand and output. The Interstate Commerce Commission under the existing law already has the responsibility for authorizing a railroad to put in sidings and to furnish cars and transportation. The information collected as above proposed should be utilized as a basis for determining whether at a given point and at a given time the public convenience and necessity do or do not demand further coal supplies. Instead of diverting to high cost "snow-bird" mines, and away from well developed and normally functioning mines, a part of the limited and sorely needed car supply and motive power at the moment when scarcity and high prices make mining profitable, the better policy will ordinarily be to concentrate the car supply at the places where it can be used to best advantage, but the still better policy is to secure such regularity of production and storage as to prevent scarcity and high prices. With a steadily increasing demand, encouragement could and would be given to the normal opening of new mines on a permanent rather than temporary basis.

Already there is positive control of the distribution of bituminous coal among the markets inherent in the freight rates, a regulation under the jurisdiction of the Interstate Commerce Commission. The freight rate differential may in fact exceed the difference in mine costs, so that the rate largely determines both the market and the market price. To this extent, there already exists a type of regulation of coal through the regulation of interstate commerce, which has a direct effect on prices.

The most convenient and practicable of the various possible methods of exercising the right of control over the interstate commerce in coal would appear to be the licensing of all who desire to ship coal from one state to another or to buy and sell in interstate commerce, whether as operators, wholesalers, or jobbers. Reasonable conditions, logically growing out of the inherent power of the government, and implied in its exercise, would naturally be attached to the granting of the license and violation of them would be cause for suspending or revoking.

The main purpose of the federal regulation here recommended would be the stabilization of the industry and the protection of the public interest. Any incidental advantages, however desirable in themselves, should be sought only gradually and as experience shows them to be feasible.

General Recommendations

The commission's findings of fact and its conclusions based thereon are given in detail in the score or more separate reports. The specific recommendations already made in part are here restated and broadly grouped as they are addressed to the three parties in interest: first, the general public in its governing capacity, whether represented by Congress or other legislative bodies; second, the coal industry itself; and third, the great body of coal consumers.

Governmental Action

First among the commission's recommendations is that Congress make definite provision on a permanent basis for continuing the collection of coal facts both to instruct public opinion and to guide the administrative correction of abuses. Because of the intimate interrelation of coal mining and transportation, the Interstate Commerce Commission is the logical agency to exercise whatever regulatory powers over the coal industry are necessary to the public interest. The Coal Commission has found the facts, and the Congress of the United States in its opinion has the right to determine under what conditions the products of those mines may pass in interstate commerce over the railways of America.

Throughout its investigation this commission has constantly found points of intimate contact between interstate commerce regulation and the coal business. Greater use of river transportation would help to get more coal to market with less coal cars. The river movement of coal, considerable at one time, has been discouraged, if not stifled, by artificial rail rates. The long-continued policy of waterway improvements financed by the national government has been ineffective in operation through unfair competition on the part of the railroads, which can now be directly controlled in accordance with the policy, expressed in the Transportation Act, "to promote, encourage, and develop water transportation service and facilities in connection with the commerce of the United States." The use of these powers recently granted to the Interstate Commerce Commission deserves serious consideration.

Economy in the use of transportation also demands that the long haul of coal be no longer encouraged by favoring rates, established without adequate regard to the cost of the transportation service rendered. If coal were coal so that it could be used for every and any purpose, instead of different kinds being required for special purposes, the zoning of the whole area of this country might be desirable, prohibiting the transportation of any coal beyond its natural market. But without adopting any artificial zoning of coal shipments, such as during the war served the double purpose of saving transportation and controlling distribution, there can be a reversal of the tendency to promote over-development caused by widening the marketing territory through reduction of freight rates relative to those of older and competing fields. Gradually and without undue violence to established conditions, the rates should be readjusted to reestablish more natural relations between the elements of cost and service which will make for economic zoning. The result will be a reduction in the total cost of transportation to the nation. This proposal is apparently in line with recent decisions of the Interstate Commerce Commission.

With coal the railroad's largest item of freight, and mine capacity far exceeding railroad capacity, the best use of the available car supply and motive power at times becomes a nation-wide problem. Along with the obvious economy in supplying each market with the coal nearest to it, is the need of furnishing an economic incentive for regular off-season purchase and storage of bituminous coal, thus increasing the length of the average working year for both miner and mine, and so reducing costs of production and prices to the consumer. The most promising method of attaining this end is by giving a controlling influence to the commercial factor in the distribution of railroad cars to coal mines in times of transportation shortage. By this change in practice first consideration would be given to the commercial ability of the producer to sell coal rather than to mere ability to produce and load it into railroad cars. While the primary duty to determine a just and reasonable rating lies with the railroad which distributes the cars, the method of rating here suggested involves a principle of sufficient concern to justify investigation of the entire subject by the Interstate Commerce Commission on its own motion. Removal of the peak load which the coal mines impose upon the railroads is a task in which the government needs to co-operate with the industry in seeking possible relief from irregular operation and overdevelopment.

As administrator of the public estate which includes 50 million acres of coal lands in the public land states, the federal government, however, has a direct responsibility in restraining overdevelopment, which exists in the West as well as in the East. The leasing law should be amended to give the Secretary of the Interior full discretion to make his approval of the opening of a new coal mine on the public domain contingent on the showing before the Interstate Commerce Commission that such a mine would serve the public and not involve a needless investment and excessive costs of operation.

In its educational relation to both the general public and the coal industry, the government occupies a well defined field of endeavor. We therefore recommend that the Congress designate an agency to unite with the industry in continuing studies of unemployment, as an effect of irregular operation, of the rate structure, serving as the medium of publicity for rate informa-

tion in the non-union fields as well as of all other basic facts on which industrial relations depend. With continuous investigation of this type, the government agency is best prepared to make under authority of the President the special compulsory investigation whenever the prospect of failure to renew an agreement is imminent, and with continuous publicity of this type the people will be best prepared to focus upon the negotiators the irresistible moral pressure implicit in their joint obligation to furnish the public with coal.

In all the investigative work relating to mining, the federal government has properly taken the lead. It is true economy for such studies that concern a score or more of states to be prosecuted under federal auspices, but the co-operation needs to go further. To reduce the hazards in coal mining, state and federal governments must co-operate in inspection, revision of mining codes, supervision of compensation insurance, and in safety education. For the betterment of operating methods and working conditions, state inspection must be freed from politics; also, the codes of some states badly need revision, and in this the federal Bureau of Mines can render special service, since unification is essential to remove unfair competition based on the different operating costs under the widely varying safety standards in neighboring states. The federal government is in a position to contribute to the education of the industry since the Bureau of Mines has gone far in its investigation of every element of mine safety—operating methods, explosives, and equipment. What is imperative is rigid enforcement of regulation based on present knowledge.

We look forward to the working out under federal supervision of a national policy commensurate with the importance of the coal industry. This would include not only a natural limitation of marketing area by the adjustment of freight rates, with a voluntary division of territory on economic lines, but also the consolidation of mining companies. The consolidation, grouping, or pooling of bituminous mining operations should be not only permitted but encouraged, with a view to securing more steady production, less speculative prices, a wider use of long-term contracts with consumers, better living conditions, more regular employment, and lower costs. The existing legal barriers to such an economic arrangement should be removed, retaining, however, the necessary protection to the public interest, by requiring supervision of the financial structure of the consolidation, as is prescribed in the Transportation Act for railroad consolidation.

Consolidations may be utilized to combine low and high cost mines, keeping the latter in reserve for periods of emergency and limiting current operation when the demand is normal to low cost mines. The bituminous industry may thus be brought from its overdeveloped, unorganized, and chaotic condition to one more nearly like that of the anthracite industry which formerly suffered from similar unstable conditions. This would be done, however, under governmental supervision and therefore without the incidental anti-social policies which have created the special problems in the anthracite industry elsewhere discussed.

The economic urgency of encouraging larger units of production is indicated by the fact that the daily output of the average mine is only four cars, which involves a wasteful dilution of transportation service. The railroads justly complain of the extra gathering service required to serve so large a number of small and scattered mines, a service in marked contrast to that given a single mine in Kentucky which in a single day loaded six trains, or 256 gondolas. The opening of so many small mines in recent years has been a contributing factor in the transportation shortage.

There is neither constitutional nor economic warrant for the federal government undertaking the distribution of coal in the several communities of the country. Democracy must pay the price, and one of the prices exacted of it is that the citizens of a community shall look after their own welfare and discharge their own duties. Therefore, it is the function of each community by licensing retail coal dealers, by organizing co-operative associations, by establishing municipal fuel yards, or in whatsoever other ways they may see fit, to take the necessary steps that after the coal reaches the railroad siding the distribution thereof is made to the consumer upon a fair and equitable profit to the distributing agency, whatever it may be.

The report also includes a discussion of action which should be taken by the coal industry itself and by the consumers of coal. Under the latter head the report says:

Storage of coal by consumers is the balance wheel between fluctuating consumption and variable production. Regular, systematic, large scale storage of bituminous coal, then, is the public's largest opportunity in helping to solve the coal problem, and the consumer's responsibility may be said to be proportionate to his annual requirements. It is especially gratifying, therefore, that the railroads, the public utilities, the iron and steel industry, and other large users of bituminous coal in the United States have undertaken storage on a large scale. The definite adoption of this policy by the larger railroads and public utilities is plainly in the public interest and never before has the outlook been more promising for the continuation and extension of this direct method of stabilizing coal production. We commend, also, the present activity of the Federated American Engineering Societies in promoting the storage of coal by practical investigation and popular education. Another way open to the consumer in aid of more regular mine operation and steadier market is the purchase of coal on contract.

It was officially stated at the White House on Tuesday that the President regards the recommendations of the Coal Commission as helpful and wise and that while he had not considered in detail the legislation necessary to put them into effect, he expects to recommend to Congress the adoption of the policies outlined.

I. C. C. Makes Favorable Report on Miller Train Control Device

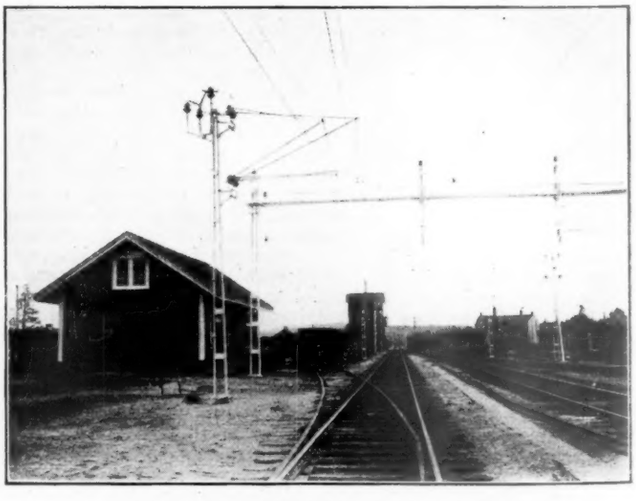
WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION under date of September 21 has made an engineering report on the plans and specifications of the Miller automatic train control system, in the form of a letter from W. H. Harland, chief of the block signal and train control section of the commission, which gives a favorable opinion on this device. The report states that the plans and description of the device have been given careful consideration; and, after outlining the description, concludes as follows:

"From the examination of the plans submitted, it is our opinion that if properly constructed, installed and maintained, this device will operate as intended."

The plans and specifications reported on are those of the device as installed on an entire engine division of the Chicago & Eastern Illinois, where it has been in regular service operation for the past nine years, with the exception that provision is made for a positive stop, dispensing with the permissive feature; and also an additional feature in the form of reversing mechanism so that the apparatus will operate in either forward or backward movement.

THE FREIGHT CAR SHOPS of the Texas & Pacific at Marshall, Tex., during the month of August, built 146 new cars and re-built 69. On one track, running repairs were made on 1,917 freight cars.

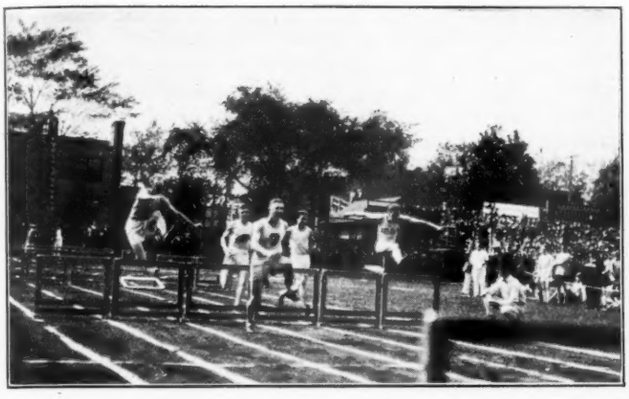


On the Lulea-Riksgränsen Line, Sweden

40,000 Attend P.R.R. Athletic Meet at Altoona

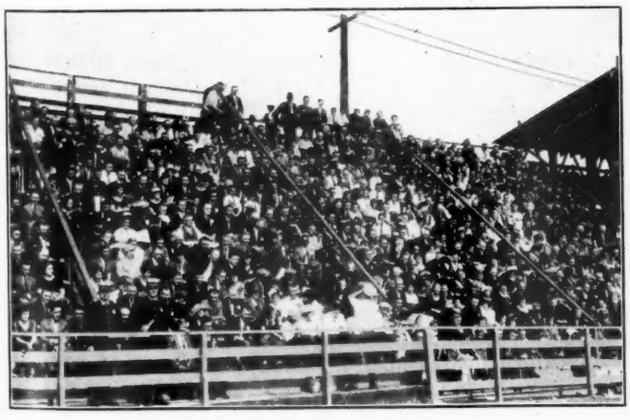
1,500 Contestants of Both Sexes Strive for System Championship in Many Varied Contests

THE PENNSYLVANIA held its annual system outdoor athletic meet at Altoona last Saturday, September 22. About 40,000 persons were in attendance, including some 1,500 contestants, all of whom were employees or sons and daughters of employees and all of whom gained the right to participate in the system meet by winning places in elimination contests held by each division, grand division and region. This meet was the biggest the company has ever held; 32 special trains were operated into and out of Altoona to handle the employees and their families from all over the system; the meet comprised 64 events in addition to a baseball game; and at one time 16 employees' bands were counted in the stands.



One of the Hurdle Races

Most of the events were held at what is known as the Cricket Field, which is a well equipped athletic field owned by the railroad and provided with seats for 35,000 spectators. In addition there is a club house with ample locker and shower facilities and several tennis courts. Events not held at the Cricket Field were the men's tennis tournament and the golf tournament, which were held at the Altoona Golf Club; the trap shooting contest, which was held at the P. R. R.'s new club house and recreation grounds in South Altoona; the rifle shooting, held at Pottsgrove, and the swimming contest, which was held at Nela Beach, Altoona.

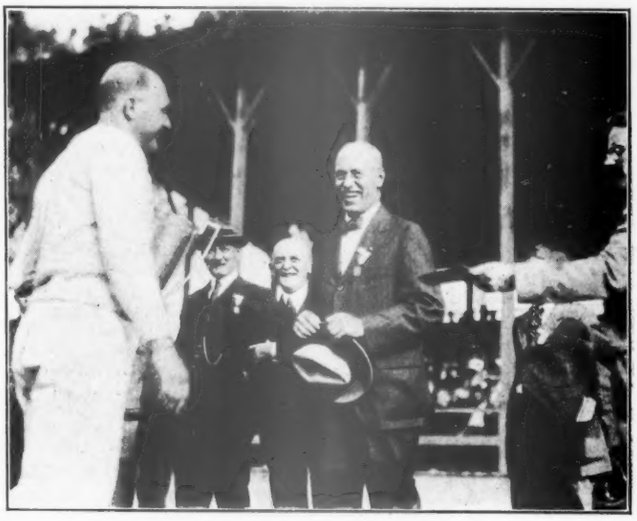


A Section of the Grand Stand

The contests held at the Cricket Field included the 50-yard dash for boys and another for girls; the 100-yard dash for girls, boys and men; the 220-yard dash; the quarter-mile, the half-mile and the mile run; the quarter-mile relay for girls; the half-mile relay and the medley relay; the broad jump and high jump; shot-put; circling bases; the 120-yard hurdle; a tug-of-war; tennis singles and doubles for men and women; quoits and horse shoes. Separate events were held for novices of both sexes in several instances.

The same good sportmanship and the same enthusiasm which characterized last year's meet was manifest by both the participants and the spectators. There was nothing of the boisterous, no drunkenness and none of the petty lawlessness which frequently characterizes carnival time in a small city.

The city was in holiday attire, bedecked with flags and the keystone emblem of the Pennsylvania Railroad. Parades of bands in resplendent uniforms lent color to the occasion and their music enlivened the crowds. All the bands were good and two of them were unusual, one an organization of "kilties"—every one a Scotsman employed at the Altoona Works, and the other a ladies' fife and drum corps from Buffalo.



General Atterbury Presenting Trophy to a Winner

Practically all of the company's principal executive officers were in attendance, with the exception of President Rea, in whose absence Vice-President Atterbury distributed the trophies to the winners.

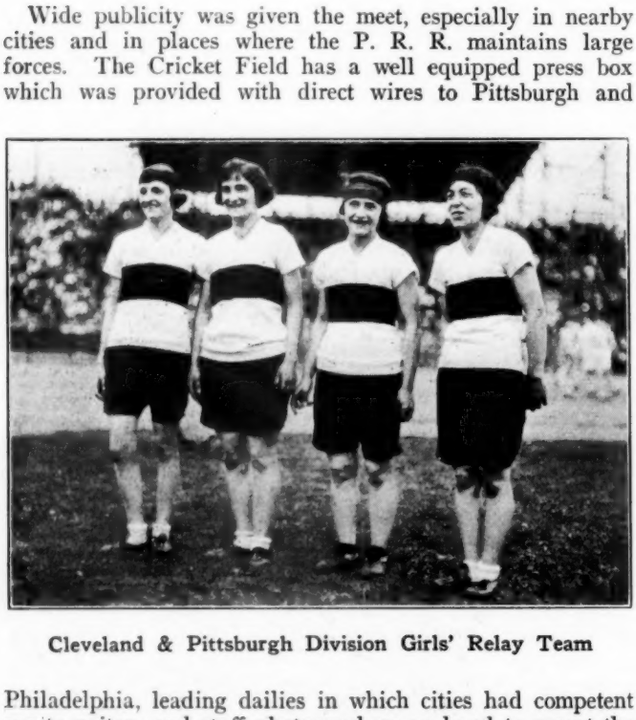
The occupations of the various contestants give emphatic testimony of how effective these contests are in mixing up employees and officers and in acquainting them with each other. For example, among the entrants in the golf tournament was a machinist from Logansport, Ind., a clerk from Chicago, a superintendent from Toledo, an air brake inspector from Beaver Falls, Pa., a car inspector from Pittsburgh, an engineman from Philadelphia, and so on. The printed list of the contestants in all events did not give the occupations of all of them, but 75 distinct classes of employees and officers in all departments were counted from all the territory served by the system. It would not require much temerity to hazard the guess that there is scarcely an

employee on the railroad who did not know, at least by hearsay, at least one of the contestants in this meet and who was not therefore interested in the affair.

To the employee interest which the meet must have aroused all over the system because of personal acquaintance with the contestants, must be added the nature of the affair which made it a contest between the regions of the system, the general office and the Altoona Works being considered as regions for the purposes of the meet. The outcome this year as compared with that of last year follows:

	1923 Points	1922 Points
Eastern Region	353½	181
Central Region	217½	55⅓
Northwestern Region	97	18½
Southwestern Region	87	31½
General Office	75	55⅚
Altoona Works	33	19⅚

Wide publicity was given the meet, especially in nearby cities and in places where the P. R. R. maintains large forces. The Cricket Field has a well equipped press box which was provided with direct wires to Pittsburgh and



Cleveland & Pittsburgh Division Girls' Relay Team

Philadelphia, leading dailies in which cities had competent sports writers and staff photographers on hand to report the meet.

The successful system athletic meet of last year and the even more successful meet of this year prove beyond question that athletics has attained a high degree of popularity among employees of the Pennsylvania. It should be noted, however, that this has not been brought about without effort or interest on the part of the management. On the contrary, the provision, equipment and maintenance of athletic fields all over the system has involved the expenditure of considerable money and in itself indicates the value which the management places on the work.

Yes! We Have No Car Shortage

By H. F. L.

Yes, we have no car shortage; we have no car shortage today.
We have loadings by millions, and ton miles by billions,
And all kinds of freight, and, say,
We have no old-fashioned embargoes; as soon as you load it the car goes.
But—yes, we have no car shortage; we have no car shortage today.

Hearing on Carolina, Clinchfield & Ohio Lease

WASHINGTON, D. C.

A HEARING on the joint application of the Louisville & Nashville and the Atlantic Coast Line for authority to lease the Carolina, Clinchfield & Ohio for 999 years was held before Charles D. Mahaffie, director of the Bureau of Finance of the Interstate Commerce Commission, at Washington on September 24, 25 and 26, and was still unfinished on Wednesday. The hearing developed an interesting exposition of railroad strategy as affecting the territory involved and also a lively opposition to the application on the part of the Seaboard Air Line, which objected to a monopoly of the proposed route between the middle west and the southeast being placed in the hands of the Atlantic Coast Line interests and taking the position that if the lease is to be allowed it should be allowed to participate.

The purposes of the two roads in acquiring control of the Carolina, Clinchfield & Ohio were explained by Henry Walters, chairman of both companies, and by W. L. Mapother, president of the Louisville & Nashville. Mr. Walters pointed out that the Louisville & Nashville territory is west of the Appalachian mountains and that of the Atlantic Coast Line east of it. There is no connection between their branches north of Atlanta. The L. & N. serves large coal areas in Kentucky, of which only a small part of the product moves into the south, but the present junctions are taxed to their capacity, he said, and additional connections are needed to develop the traffic which would be expected to follow the construction of two short connections from the L. & N. to the C. C. & O. By these connections, for which preliminary surveys were made some time ago, he said, a favorable through line could be established between the coal fields on the L. & N. and the Coast Line and its connections and industries, which it is hoped can be developed into a great through route between the middle west and the southeast. However, Mr. Walters said, the L. & N. itself could not be expected to build the necessary connections for only a small division of the through rates which it would receive, but the community of interest between the Atlantic Coast Line and the Louisville & Nashville, of which 51 per cent of the stock is owned by the A. C. L., is such that under a lease arrangement harmonious operation of the three roads would be assured. The preliminary surveys, he said, indicated that the construction on the part of the L. & N. would cost $5,000,000 or $6,000,000, and it is proposed to expend about $6,000,000 for improvements on the C. C. & O., of which about $3,500,000 would be for equipment. Possibly also $2,500,000 would be expended on the A. C. L. and its subsidiaries for grade reductions to enable them to handle the additional traffic. He thought the public would be better served by placing the Clinchfield in the control of carriers that would be interested in its improvement and would have the financial strength and the result would be a greater competition with the Southern. Mr. Walters also pointed out that the proposed lease is in harmony with the Interstate Commerce Commission's tentative consolidation plan. The lease, he said, would be based upon a valuation of the C. C. & O. of approximately $55,000,000 and its capitalization would be reduced by $16,500,000 to $54,792,000. Of that, $25,000,000 would be represented by stock and the balance by indebtedness to be assumed by the lessees.

Under cross-examination for Forney Johnston, representing the Seaboard, as to who initiated the negotiations for the lease, Mr. Walters said that he had been approached on the subject even before the construction of the C. C. & O. was completed, but declined to consider it because he thought the construction of the road would cost a great deal more than its builders thought it would cost. Preliminary sur-

veys for the connecting lines were made in 1911 and 1912, but the matter was dropped. It had been brought up several times since, however, by those interested in the Clinchfield and negotiations were resumed in January of this year. Mr. Walters insisted that it would not be to the interest of the L. & N. to build the connections without the lease.

E. E. Clark, representing the city of Charleston, S. C., asked whether the lessee had any plans for the development of water terminal property originally acquired by the C. C. & O. at Charleston near the terminals of the Coast Line, and whether a representative of the lessees had not testified before the Georgia Railroad Commission that if the lease were approved it was proposed to make Savannah the great port in the southeast. Mr. Walters said that no plans had been made for the development of one port above another and that it was expected to leave to the people at the various ports anything necessary to develop them. If any one had given such testimony as Mr. Clark indicated, he said, he was not authorized to do so.

John Skelton Williams asked several questions as to why it would not be profitable for the Coast Line to construct the proposed extensions itself, but Mr. Walters insisted that he would not recommend such a step. In reply to a question by a representative of the Virginia Corporation Commission, Mr. Walters said the lessees expected to operate the Clinchfield through a separate organization in the same way that the Georgia Railroad is operated.

Mr. Mapother testified that the primary purpose of the L. & N. is to put that road in a better position to serve the mines in eastern and southeastern Kentucky which now find their principal market in the north and to relieve the intolerable operating conditions which have existed in recent years by affording these mines an outlet into the southeast and enabling the road to work the field from either end. Operation into those fields now, he said, is in one direction only and the L. & N. has been unable to furnish an adequate supply of cars because of its dependence for the return of empties on its connections north of the Ohio river. The L. & N. has sufficient equipment to transport the entire product of its mines, he said, but if it had owned all the coal cars in the country it would not have given better car service in the last few years unless it had been able to control their return. If the lease is approved and the connections with the C. C. & O. built, there will be one continuous unit for operation, affording two avenues for providing the mines with empties and for delivering their loads, besides being able to control the car supply to a considerable extent. This would mean, he said, that at times when the Cincinnati gateway is congested it will have an outlet from the southeast and not have to suspend operation. The road is now at the mercy of its connections to the north, he said, and it wants the outlet to the southeast to be subject to its direct control. "In the first place," he said, "our connections in the southeast are friends of ours, and, in the second place, if they do not return our cars we can handle them. We won't let any more cars go to them until they return what they have."

Mr. Mapother said that since federal control the primary purpose of the L. & N. has been to extend its facilities for handling coal and it is now engaged in spending $41,000,000 for that purpose, including the addition of 50 new locomotives and 8,000 coal cars. He had made a personal examination of the C. C. & O. and, in his opinion, it is worth well in excess of the $55,000,000 based on the physical properties alone, because there is no way of calculating the prospective earning capacity, he said. Mr. Mapother said that the exact routes of the connections with the Clinchfield had not yet been determined.

On cross-examination by Mr. Johnston, Mr. Mapother said that if the L. & N. were to build the connections without a lease it would be no better off than it is today at Cincinnati, but would still be at the mercy of its connections for the return of cars. He said the road would naturally expect to make rates on coal into the southeast that would enable its coal producers to do business there. The present market is largely restricted to the north and west because there is only a circuitous route to the south. He was asked many questions as to why the objects to be accomplished could not be served if some other railroad than the Coast Line were allowed to participate in the lease with a provision that the Atlantic Coast Line could be substituted if the other road defaulted. Mr. Mapother said he could have no assurance that such a plan would prove successful and that he would not be interested in the proposition under such circumstances.

E. C. Bailly, secretary of the C. C. & O., testified regarding the approval of the proposed lease by the stockholders of that company. He said that he had voted the stock by proxies for the syndicate managers that have controlled the property since 1920. He said the reduction in capitalization would be effected by cancelling the income debentures and by substituting an issue of $25,000,000 of common stock for the present common and preferred stocks.

C. E. Backus, president of the Clinchfield Coal Corporation; R. C. Tway, president of the Harlan county coal operators' association, and S. R. Jennings, representing the Hazard county coal operators, also expressed strong approval of the proposed lease and of the new route to be effected. Mr. Backus said that the C. C. & O. is comparatively a small unit and difficult to finance and he thought it would be much better for his properties, as well as for the public, if the territory were to be served by a stronger system. He thought the increased facilities of a north and south railroad would be of tremendous advantage to everybody served. Mr. Clark asked the witness if there had not been an agreement between the coal company and the C. C. & O. looking toward the extension of the C. C. & O. to Charleston and the construction of a coal terminal at that point. Mr. Backus said he knew of no such agreement, but that a suggestion had been made by the railroad that the coal company should guarantee the carrying charges of such a coal plant, but that the coal company had refused to do so.

Mr. Tway said that his association had adopted resolutions offering any assistance to the L. & N. in getting the lease approved after he had learned of opposition to the project. He said he had heard that the Southern and the Seaboard were going to ask John Skelton Williams to "scout the bushes and stir up agitation in the south," but when Mr. Williams demanded to know where he had obtained this information, he replied that it was general talk and he could not tell just who had told him. He spoke of the great anxiety of the Harlan county operators to secure an additional outlet to the south and said that when approached by the promoters of the Southeastern Railroad they had agreed to finance the building of that line by a bonus of 5 cents per ton up to $6,000,000. This indicated, he said, that they are willing to pay that much to get an additional railroad, but that if they were to have only one route they would prefer a connection with the C. C. & O. because they thought a system under one control would be able to furnish a better car supply by controlling the return of empties.

Mr. Johnston, in referring to the statement about Mr. Williams as being "in the realm of fancy," said: "There is no opposition from this side of the table to the L. & N. making a connection with the C. C. & O." He asked if the witness would have any objection to the lease being made with another road taking the place of the A. C. L. as a partner of the L. & N., but Mr. Tway replied that that was outside of his province.

J. M. Barr, formerly president of the Seaboard Air Line, who said he is now a farmer and also interested in some coal properties in Virginia, testified as the first opposition

witness that the opening of the through route would be to the advantage of the public, but he objected to its being under the control of the L. & N. and A. C. L., saying that the route should be maintained as a bridge line open to all its connections on equal terms. He suggested the substitution of the Seaboard Air Line for the Atlantic Coast Line as a participant in the lease. Mr. Barr also objected to the idea of bringing Kentucky coal into the south in competition with the coal now marketed there, saying that it would not be done without discriminatory rates if the present rate structure in the south is correct. He said the new route would not lead to the burning of any more coal and to the extent the Kentucky coals were introduced it would displace existing coal. Mr. Barr said that while president of the Seaboard Air Line he had pointed out to the directors of that road that the breaks of the Cumberland afforded the last feasible pass through the mountains, but that they had taken no action at that time. Later he had learned that the Chesapeake & Ohio was proposing to seize the pass and had forestalled them by sending a force of men to that point and that he had thus opened the way for the acquisition and extension of the road by Thomas F. Ryan and his associates. He said he was acting at the time in the interest of obtaining a connection for the Seaboard at a time when Mr. Ryan and his associates were also interested in that property. He did not see how the operation of the road could be made better under the proposed management than under an independent management and he did not think the last passage through the mountains should be left absolutely at the disposal of one railroad system.

J. J. Campion, president of the Carolina, Clinchfield & Ohio, was called to the stand by Mr. Johnston to testify regarding the operation of the road. He said the physical operation has been fairly satisfactory, but various improvements had been under consideration for some time as necessary when the volume of traffic had developed sufficiently. He gave figures regarding the interchange with other roads to show that the road received more support from the A. C. L. than from other roads and said that if the road were operated as a bridge line between the Norfolk & Western and the Chesapeake & Ohio on the north and the Atlantic Coast Line, Seaboard and Southern on the south, the two northern roads would not be particularly interested in supporting it.

Charles R. Capps, vice-president of the Seaboard Air Line, said in part:

"The position of the Seaboard as to this matter is exactly what it has been for many years; the Seaboard considers that it would be a public calamity of the first magnitude to restrict the functions of the Clinchfield road as is necessarily involved in this proposed lease. An open Clinchfield road, by reason of its coal reserves and its strategic location through the Appalachian range, is of primary public concern, since in no other way may adequate competitive transportation into the Carolinas and the southeast be assured. We consider that a dominant control of the Clinchfield road by the Atlantic Coast Line interest will withdraw effective competition from important areas in Atlantic Coast Line territory and, also in Southern Railway territory. We take the position that there is no justification whatever for this lease from the standpoint of the public interest in transportation, or for the protection of the owners of the Clinchfield road, or in order to assure the support and development of that road, or to further any reasonable or legitimate interest of either of the proposed lessees. To consider that every objective desired by the Louisville & Nashville with reference to connections proposed with its Kentucky lines can be adequately secured by such connections either without a lease or by a lease to the Louisville & Nashville and other carriers in the southeast connecting with the Clinchfield road and competing with the Atlantic Coast Line and ready, willing and able to assure and comply with the lessee obligations proposed by this lease. We do not conceive that there is any justification for the suggested attitude expressed in this hearing that the Atlantic Coast Line will not consider a lease of the Clinchfield road, or, in effect, countenance participation of the lease of the Clinchfield road, by the Louisville & Nashville unless all other carriers are excluded from participation. It is our thought that the public interest will be best served by placing the Clinchfield in a position similar to that of the R. F. & P.; that is, in the control of its important existing and potential connection at each and in a way that will fairly protect the interest of each and that, should negotiations develop some such plan is impossible of consummation, then the next best solution is to place the Clinchfield road in the control of those of its connections which may desire to participate and in a manner that will establish and maintain its status as an open highway. What I have said disposes of our position as to the Clinchfield road itself. In conclusion upon this point and with reference to the broader problem of transportation in the southeast, we have no doubt whatever that the approval of this lease would create and perpetuate an unwarranted and wholly disproportionate domination of transportation by the Atlantic Coast Line in the territory which it reaches under circumstances of less justification than at any time in the history of American transportation."

Mr. Capp also read a statement prepared by S. Davies Warfield, president of the Seaboard, outlining the history of that company and of the construction of the C. C. & O., by directors of the Seaboard who later gave up their interest in that company. After the Seaboard receivership he had made efforts to effect a lease of the Clinchfield with the participation of the Chesapeake & Ohio, Southern and Atlantic Coast Line, but the latter two declined and later efforts to effect a lease to the Seaboard and the C. C. & O. failed.

A. J. Maxwell, of the North Carolina Commission, submitted a copy of that commission's report opposing an exclusive lease to the L. & N. and the Coast Line.

THE LEGISLATIVE BOARDS of the Brotherhood of Locomotive Engineers, the Order of Railway Conductors, the Brotherhood of Locomotive Firemen and Enginemen and the Brotherhood of Railroad Trainmen have voted unanimously to continue their affiliation with the Progressive Voters' League of Michigan on political matters. The delegates decided to prepare and prosecute a definite legislative program for Michigan and approved a plan of joint political action.

A Tidewater Coal Dumper on the P. & R.

Gasoline Motorized Coach for the C. & N. W.

Trial Run Shows Practicability of Synchronized Double Motor Drive and Double End Control

A Chicago & North Western passenger coach of wood construction has recently been equipped with two gasoline motors, each driving on one of the trucks, by the Oneida Manufacturing Company, Green Bay, Wis. This arrangement of separate driving units has been made possible by the development of a system of synchronized electro-pneumatic control, installed in each end of the car so that it may be operated with equal facility in either direction.

The car recently made a trial run from Green Bay, Wis., to Pulaski, and return, after which it was turned over to the Chicago & North Western for further test under service conditions. On the trial run the easy riding qualities of the car and absence of vibration were noticeable, even at 45 miles an hour, the highest speed attained. The run was informal, no records being kept of speed, fuel consumption, temperatures, etc., but the car demonstrated its ability to run with either one or both driving motors in operation, when controlled from either end. A speed of about 20 miles an hour was made on the maximum grade of 0.7 per cent.

An interesting feature of the trial was the switching demonstration in which the coach was coupled to two loaded 50-ton box cars, which it readily moved back and forth on a siding. After the cars were started one motor was stopped and the other proved sufficient to keep them in motion.

This car has not been in service long enough to prove the present arrangement the most desirable in every detail. The two motors, for example, develop 70 hp. each and, with a loaded car weight of about 71,000 lb., the total weight per hp. is over 500 lb. If the car proves to be under-powered, higher rated motors can be readily applied, as the clutches and transmissions have been designed to transmit 140 hp. to each truck if necessary. A lack of adhesion to the rails was also noticeable on the trial run when the two pairs of driving wheels slipped in starting the loaded freight cars. It is believed that this condition can be improved by using larger steel wheels, instead of the present 33-in. cast iron wheels, and four wheel trucks in which a greater proportionate weight of the car will rest on the drivers.

Advantages in Design

The following are some of the advantages which the designers have endeavored to attain with the motor equipment applied to this car: (1) Safety of operation, secured by applying motor equipment to standard railway cars with no essential change in the car design; (2) reliability, obtained by using well established standard units for the motors, transmissions, clutches, air compressor, electric generating set, etc.; (3) low initial cost, by installing these standard units on equipment already owned by the railroads; (4) economy and flexibility in operation by using two relatively light, high-speed motors to get the car up to speed and then cutting out one; (5) electro-pneumatic, synchronized motor control, maintaining the speeds of the two motors the same within extremely close limits, well within the requirements for motors driving separate axles; (6) double end control, eliminating the necessity of turning the car at the end of its run, either on a turntable or wye; (7) arrangement for two or more cars to be coupled as multiple units and operated by a single motorman from the front end; (8) provision of two power units, enabling the car to reach its destination with one motor driving should the other become disabled; (9) a minimum number of gears in the transmission, always in mesh, reducing friction loss and preventing shifting or clashing of gears; (10) motor units readily detachable for repair or replacement. Should a number of

Fig. 1—Motorized Passenger Coach of the Chicago & North Western Ready for Branch Line Service

these cars be placed in branch line service from one terminal, one additional power unit can be repaired and kept in reserve, being quickly applied in case of emergency.

Description of Motor Equipment

The car selected by the Chicago & North Western for the application of Oneida motor equipment was the wooden frame coach No. 2680, equipped with six-wheel trucks, 33-in. cast iron wheels and 4¼-in. by 8-in. journals. This car weighs 62,000 lb. and seats 60 people. Fig. 1 gives the general appearance of the car, the pilot, the easily-detachable headlight, the horn and one radiator on the roof being plainly evident. The arrangement of the driving mechanism and auxiliary units used on the car are plainly shown in Fig. 2.

Practically no change was made in the internal arrangement of the car in applying motor equipment with the exception that the longitudinal seat in each end was removed and replaced by the driver's seat and control apparatus. Referring to Fig. 1, the air reservoirs are shown at *AA*, air compressor at *C*, electric generating plant at *E*, gas tanks at *GG*, auxiliary reservoir at *R* and driving motors at *MM*. The driving motors are Model 6-B, Continental Red Seal, rated at 70 hp. at 2,200 r.p.m. They are of the six cylinder type with 3-3¼-in. bore and 5-in. stroke. The comparative motor and car speeds are shown in the accompanying table.

A Bosch high tension ignition system is used in conjunction with a bus type generator. Both the starter switch and carburetor choker are of the Oneida remote controy type. Pneumatic speed regulation is provided and a hydrostatic governor gives uniform control from 250 r.p.m. to 2,200 r.p.m., the maximum speed. The air cleaner is of the centrifugal type. A Cotta unit power plant transmission is used, the gears, which are constantly in mesh being provided with sliding clutches. The gear ratios are: Low, 5.2 to 1; second, 2 to 1; high, 1 to 1. Detlaff disc type clutches are used, having nine discs, pneumatically controlled.

Synchronizing is accomplished through the medium of equalized air pressures. The selection of the gears only is accomplished through low voltage solenoid operation, while the work of shifting is performed by air pressure. The hydrostatic governor is directly connected to the water jacket

COMPARATIVE MOTOR AND CAR SPEEDS

	Speed of engine in R. P. M.				
Speed of car in miles per hour	500	1,000	1,500	1,750	2,200
1st speed	1.88	3.76	5.64	6.58	8.3
2nd speed	4.91	9.82	14.73	17.18	21.6
3rd speed	9.82	19.64	29.46	34.37	43.2

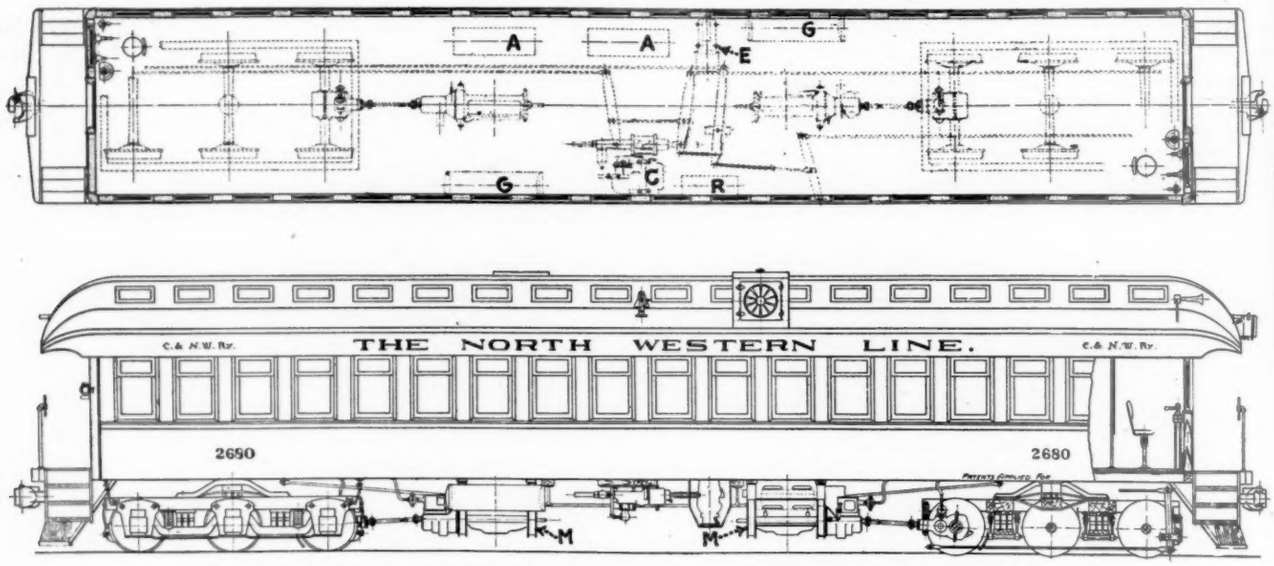


Fig. 2—Plan and Elevation Showing Arrangement for Double Motor Drive and Controls

Veterans of the St. Louis-San Francisco—Picture Taken at Their Annual Reunion at Springfield, Missouri

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of the motor, the pressure in the water jacket depending on the speed of the motor. The counteracting pressures which regulate the speed of the motor from the operator's control are produced by compressed air. This is the type of construction which makes it practicable to utilize a number of power cars in a train, all controlled from one station by one operator.

The clutch and gear shift mechanism are pneumatically operated in unison. A double reduction gear is used on the axle, arranged for equal speeds in either direction with pneumatic reversing control; the ratio is 5 to 1. The tongue arm is spring-mounted to the truck frame and the suspension is such that the unit can be quickly removed or installed. The gasoline tank capacity is 52 gal. per motor unit.

Fig. 3—Duplicate Controls Are Located in Each End of the Car

A Modine-spirex double core radiator for each unit is mounted on the roof. The fan is provided with electric thermostatic control whereby it cuts in at 160 deg. F. and cuts out at 150 deg. F., independent of motor speeds. During the trial run this fan started as soon as the car stopped but while the car was in motion sufficient air passed through the radiator to keep the cooling water temperature below 150 deg. F. A centrifugal pump circulates the water in the cooling system, which has a capacity of 20 gal. Special arrangements are made for operating in low temperatures.

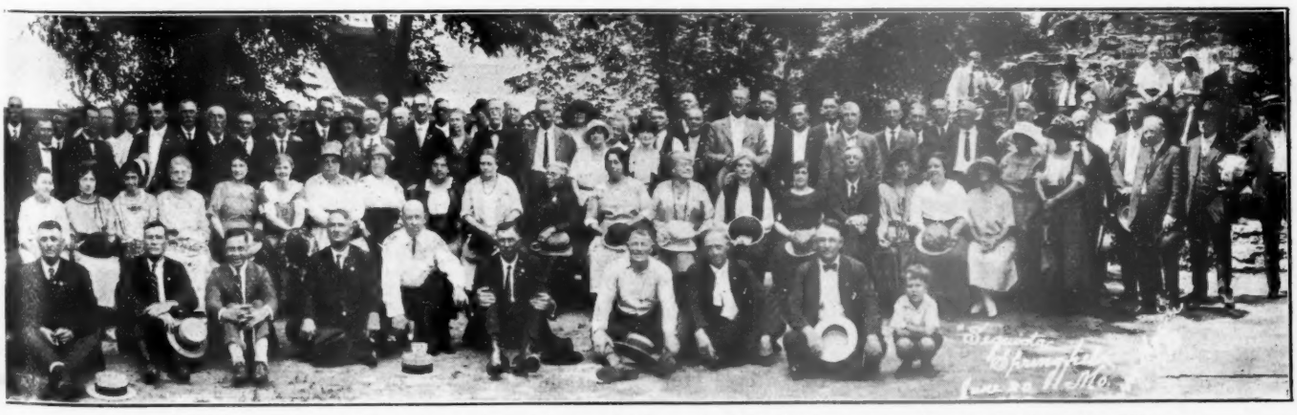
The speed control is pneumatic, operated either by hand lever or foot pedal. The pneumatic gear shift and clutch are also operated by a hand lever. The gear selection, motor start and stop control are operated by hand levers and interlocked with the pneumatic control to make the arrangement positive and fool proof.

The air brake equipment is of the Westinghouse type and consists of a two-cylinder, 10-in. compressor, directly connected to a 1½-hp. 110-volt motor, equipped with the necessary regulating and controlling valves, two 14-in. by 48-in. air reservoirs and a standard controlling valve. On the car illustrated, brake shoes are applied on four wheels of each truck. The brake control system is arranged for both automatic and straight air application.

The car carries a Kohler four-cylinder, 2,500-watt, 110-volt, direct current, generating set which furnishes current for the interior lights, ventilating fan, headlight, radiator cooling fan and air compressor motor. This generating set is automatic in operation. Whenever a switch is turned on the generating set starts. All the accessories are thus separated from the power motors which need not be operated simply to provide air pressure or electricity. Moreover, a uniform speed of the air compressor is secured and there is no need of large storage battery capacity. This car is equipped with one small 24-volt battery. A double air-operated sander, Golmar automatic bell ringer, 250-watt headlight with dimmer and Strombos whistle complete the equipment of the car.

An operator's compartment, located at each end of the car, is enclosed by curtain *M*, Fig. 3. Two tell-tale lights *A* are provided to indicate whether or not both motors are operating; *B* is the air brake valve; *C*, the clutch throw out and gear shift; *D*, the duplex air brake gage; *E*, the electric speed selector; *F*, the sander valve; *G*, the governor valve, and *H*, the air-operated bell valve.

THE TRAINS of the Muscle Shoals, Birmingham & Pensacola Railway, according to a press dispatch from Pensacola, Fla., on a recent Monday morning, were reported idle, and the prospect was that business would be suspended for several days because the trainmen had not received their pay. It appears that on one former occasion there was a similar "strike" which lasted several days. This road extends from Pensacola, Fla., northward to Kimbrough, Ala., 142 miles, and according to the Official Guide runs one passenger train daily each way as far as Mexia, 90 miles from Pensacola, and another train daily, except Sunday, between Mexia and Kimbrough.



Veterans of the St. Louis-San Francisco—Picture Taken at Their Annual Reunion at Springfield, Missouri

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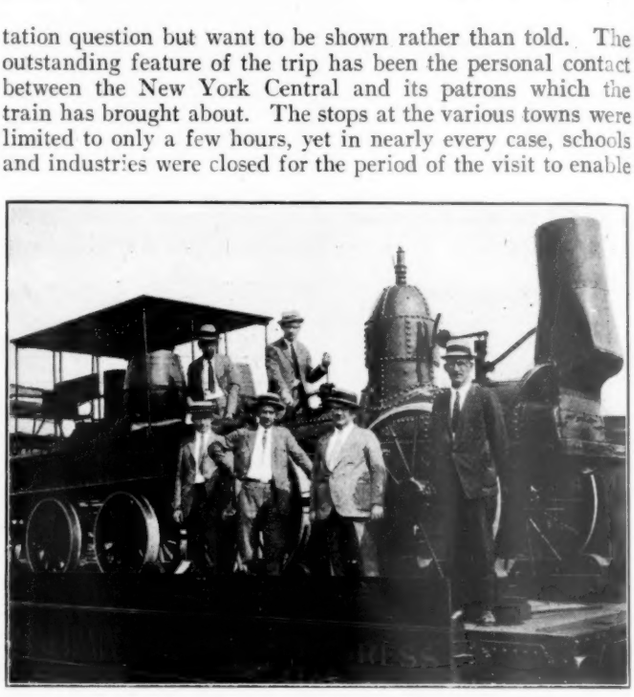
Service-Progress Special Arouses Wide Interest

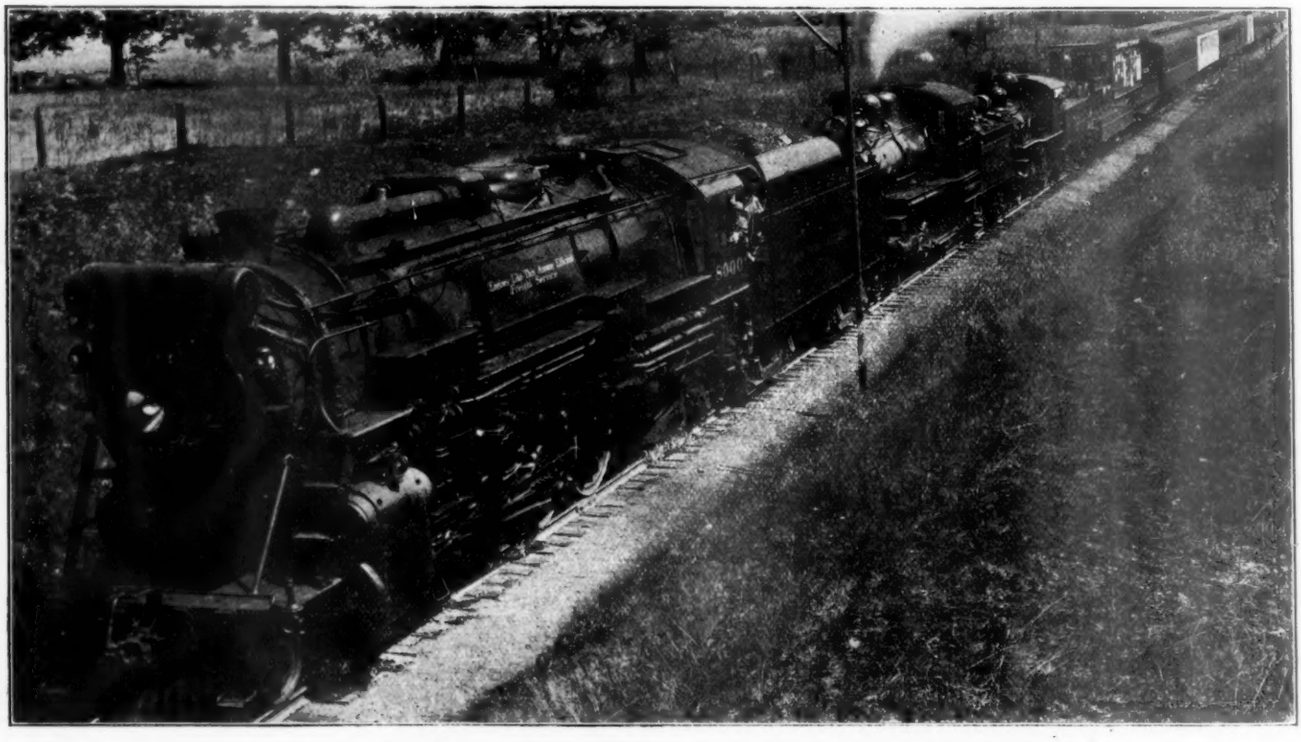
THE Service-Progress Special, which is being run by the New York Central over its lines to demonstrate the evolution of transportation and the community of interests between the farmers and the railroads, has been accorded a reception by the people of the six states which it has already traversed which has far exceeded the hopes of the officers in charge of the exhibition. When the train left Chicago on September 23, it had visited six states and had been viewed inside and out by over 450,000 people. During the past few days the average attendance has exceeded 7,000 people per day, so that it is probable that when the run is ended about November 1, over 750,000 people will have gone through the train. The special is being operated under the direction of the Agricultural Relations Department of the New York Central, of which E. H. Anderson is manager.

The idea of running such a traveling exhibit had its conception in a suggestion of the American Farm Bureau Federation and the National Grange, which felt that it would have a favorable effect in arousing a personal interest in the railroads among the people in the cities and on the farms and in demonstrating the fact that the interests of the people and the railroads are in common with one another. As described in the *Railway Age* of July 7, page 39, the train is drawn by the latest type of modern locomotive and includes the old DeWitt Clinton engine and coach of 1831, the famous engine "999," which established the world's speed record in 1894, charts, graphs and exhibits illustrating the tremendous increase in state and federal taxes, working models of steam engines from the earliest types to the present and moving pictures showing every phase of operation from interior points of shipment to seaboard destinations, including freight for foreign transportation.

The operation of the special has emphasized the fact that people generally are tremendously interested in the transportation question but want to be shown rather than told. The outstanding feature of the trip has been the personal contact between the New York Central and its patrons which the train has brought about. The stops at the various towns were limited to only a few hours, yet in nearly every case, schools and industries were closed for the period of the visit to enable every one personally to inspect the extraordinary exhibition. The Grange speakers, who addressed the people at every stop on the transportation question and its relation to the farmers and other patrons, were introduced by the mayors of the cities or other public officers. This emphasized the fact that the train was not being run for advertising purposes but to further the common interests of both the people and the railroads.



Farm Bureau and Grange Speakers Who Addressed People at All Stops



The New York Central's Service-Progress Special

When the train started on June 18, excessively hot weather

cut down the attendance to a low figure, but after the second week there was less of this difficulty to contend with. As a result the attendance figures, which are kept by a man with a registering machine who is stationed constantly at the entrance to the train, have increased consistently from day to day. In Ohio, which was the first state visited by the special, 101,878 people passed through the train. In the next state, New York, the attendance increased to 116,859. In Pennsylvania, only four stops were made, yet 8,471 people viewed the exhibit. In Michigan, 168,233 visitors inspected the train. On September 23, when the train stood in the La Salle street station at Chicago, 5,542 people were in attendance. The biggest day was at Mishawaka, Ind., and South Bend, on September 19, when a total of 10,839 visitors were accommodated. Since the present average attendance is over 7,000 a day, it is likely that even this record will fall before the conclusion of the trip. These figures are for those who went through the train only and do not include the thousands who viewed it from the outside. Requests for the return of the train next year have been universal and it is probable that this will be done.

New England Favors Regional Rail Grouping

GOVERNORS of four of the six New England states, various representatives of state and local chambers of commerce and others, among whom was Daniel Willard, president of the Baltimore & Ohio, appeared before the Interstate Commerce Commission in Boston this week to tell of their preference for regional grouping of the New England roads. The occasion was the hearing relative to the disposition of the New England roads in the consolidation plan. The hearings were conducted by Commissioners Hall, Eastman and Cox. They began on Monday and were held in Ford Hall and in one of the rooms in the State House. The interest that the New England public is taking in the issue was evidenced by a large and interested attendance of shippers and others.

The testimony in the early stages of the hearings centered around the so-called Storrow report known officially as the report of the joint New England railroad committees. This committee consisting of 30 members, appointed five each by the respective governors of the six New England states reported to the governors recently—in a report which has since been given wide circulation in New England—its preference for a regional grouping of the New England lines. The grouping recommended did not include the Boston & Albany which is leased by the New York Central nor the Grand Trunk and as subsidiary, the Central Vermont. The New Hampshire and Maine members dissented, the former preferring trunk line affiliation.

Governor Cox of Massachusetts, the first witness called, presented the Storrow report as evidence. He expressed himself as favoring a consolidation of the New England roads into one system along the lines of the joint committee suggestions. He expressed his view that the people of New England would be more sympathetic to a regional grouping because New England men would be directing the road's affairs and New England's peculiar industrial situation calls for a local and sympathetic railway management. This view was also expressed by Governor Flynn of Rhode Island, by Governor Templeton of Connecticut and by H. C. Comings, speaking for Governor Proctor of Vermont. Governor Brown of New Hampshire expressed the contrary view. He said he had no fear of absentee management and indicated that New Hampshire probably would not join in enacting enabling legislation looking to the "rehabilitation by co-operation" proposed by the joint committee report. A letter from the governor of Maine was to the effect that he had not yet reached the point where he could endorse either regional or trunk line consolidation.

Several industrial executives, traffic managers and others representing chambers of commerce and traffic bureaus in Connecticut and Massachusetts appeared on the stand on Monday afternoon, Tuesday and Wednesday. They were called by the joint committee which some time ago was chosen by the New England governors to conduct the case for them. In each case these representatives told of action taken by the board of directors or by the membership of the organizations which they represented, the action being usually a predominant vote in favor of the regional plan of consolidation as recommended in the Storrow report. Each witness was interrogated as to the manner in which the plan had been studied and the vote taken in his community. He was in most cases asked as to the character of the industry represented and asked to state his views as to the railroad service available, the routes used, the comparative volume of freight moving in or out by rail, water, the Canadian and other differential routes, etc. Considerable interesting evidence was brought out as to the comparative excellence of the service given by the New Haven and Boston & Maine and by the Boston & Albany, the shippers apparently feeling much more favorable towards the east.

Daniel Willard Favors Complete New England Consolidation

On Tuesday, Daniel Willard took the stand and presented a rather elaborate argument in favor of New England grouping. He went even further than the Storrow committee because he suggested that in the New England group there should also be included the Boston & Albany and Grand Trunk. Mr. Willard is a native of New England, his home at one time having been in Vermont.

Mr. Willard said in part:

"On May 17 I appeared as a witness before the Interstate Commerce Commission in behalf of the Baltimore & Ohio and endeavored to explain the viewpoint of that company concerning the commission's tentative plan for consolidations. I said: 'We are of the opinion that the New York, New Haven & Hartford should not be included in the Baltimore & Ohio system, but that the properties of that company, in conjunction with all other New England railroad properties east of the Hudson River, should be consolidated into what might be termed a New England regional group, to be held and operated as a distinct unit, interchanging traffic freely and without prejudice with the several trunk line systems and with the Canadian railroads.'

"My statement before the commission in Washington last May, from which I have just quoted, explains briefly my point of view concerning the New England situation. Happily, I find my views as president of the Baltimore & Ohio concerning this particular situation quite in accord with my views as a former resident and present property holder in New England.

"It seems to me that the New England Commission took a very wise and far-reaching step when it decided to deal with the problem in terms of New England rather than in terms of the separate states, because it is in every sense of the word a New England problem; it is not a problem peculiar to Massachusetts, or Connecticut, or New Hampshire. Thinking of the matter, then, in terms of New England and following my line of reasoning, how can the New England railroads, taken as a whole, reduce their cost of transportation? I am convinced that the answer to that question is to be found in a complete consolidation of all the lines within New England. In no other way do I think it is possible for the New England railroads to realize the maximum economies.

"I am convinced that if all existing corporate boundaries and restrictions could be wiped out and forgotten, and if all the New England railroads could be operated as if owned in fact by one company, under one chief responsible head, very great economies could be made. Under such conditions there would be no reluctance on the part of a general manager to place an embargo via one gateway which might be congested, providing another gateway were open, because in any event the earnings would all accrue to the same general group or system.

"Undoubtedly it would also develop that new combinations of routes could be worked out, possibly with some little additional construction, so that much of the business could be handled over

more favorable grades and via shorter distances; in that way economies could also be accomplished. I base my advocacy of a New England group of railroads primarily upon the economies to be accomplished in that and in no other way.

"I am opposed to a partial grouping of New England railroads, as has sometimes been suggested, because such an arrangement would prevent the accomplishment of the greatest possible economy in operation which can only be realized by consolidation of all the lines.

Chance of Greater Revenue

"Referring to the possibility of increasing revenues from an adjustment of rates local to New England, I must confess that in this respect I do not feel so certain of my ground, although I believe substantial results could be so obtained. I believe that a careful survey of the whole rate structure by a group of men sympathetic with the needs of New England railroads and sympathetic with and responsive to the needs of New England business, would find that there are in effect today many rates much lower than they really need be when judged by the requirements of the situation. It might also develop that while some rates might well be raised, and in the general interest ought to be, others might be and perhaps ought to be reduced. I am not certain in my own mind just what such a survey would develop. I am inclined to feel, however, that upon the whole it would yield a net increase in revenue to the New England railroads and without detriment to New England industry.

"The two things just referred to having been accomplished, it would seem that further relief, if necessary, would have to be obtained largely through readjustment of joint rates.

"The Baltimore & Ohio has not in the past carried as large a portion of the business to and from New England as it ought to have carried when the geographical location of the company is considered. The tentative plan of the Interstate Commerce Commission, as I have already shown, proposes the consolidation of the Baltimore & Ohio, Reading, Central of New Jersey, Lehigh & New England and Lehigh & Hudson railroads. Such a consolidation, if brought about, would provide a through line, all under one management, from Chicago right through to a direct connection with the New Haven road. For the first time the Baltimore & Ohio would become a direct and real connection with New England, and a real and not simply a potential competitor for New England business; but even such a connection would mean little if, after all, the Boston & Albany and possibly other lines were consolidated with the New York Central system on the north, and the New Haven were to be consolidated with the Pennsylvania system on the south. If there should be created one all-embracing New England railroad system, with equal rates and divisions via all junction points at the Hudson river and with all lines, then the Baltimore & Ohio would have opportunity, with its direct line into Maybrook, to compete on fair and equal terms with the other great carriers to the west, at least for the freight business of New England.

"A New England region would also in my opinion insure to New England shippers better service than they would get under any other arrangement. The Baltimore & Ohio, I am sure, under such conditions, would feel that its interests would require that it should have representatives at different points in New England to solicit the business over its lines as against the competing lines. Of course we could offer nothing as an inducement for such patronage except the character of our service; rates would be the same over all lines, but the incentive to give good service would be present and controlling. If on the other hand it should be decided to combine the New England roads with trunk lines west of the Hudson, and if the Baltimore & Ohio should be left out of such combination as the report of the New England committee suggests then I see no reason why the Baltimore & Ohio under such circumstances, should feel justified in keeping any representatives at all in New England to solicit business for its line.

"It has been said that an all-embracing New England group could not be brought about because of the present control of the Boston & Albany by the New York Central, and of the Central Vermont by the Grand Trunk. Undoubtedly, the control of the Boston & Albany is considered a valuable asset by the New York Central; at the same time, if it should appear that there is a substantial unanimity of sentiment among New England business men and others in favor of such a combination as I have suggested, I cannot believe that the New York Central or any other company would be willing to stand in the way of such a solution of the problem."

Maine Central Has Scheme of Its Own

President Morris McDonald of the Maine Central read at the hearings on Wednesday afternoon a statement of his board of directors opposing both the regional New England plan of grouping and any plan that might link the Maine Central with both the trunk lines and the Boston & Maine. The statement offered instead a plan whereby the Maine Central and also the Bangor & Aroostook would be taken over by the New York Central. A physical connection with the New York Central would be secured in this plan by the taking over of a line of the Boston & Maine between Portland and Worcester, at Worcester, connection is made with the Boston & Albany which is leased by the New York Central. The statement of the Maine Central directors pointed out that there were essential differences between the conditions in northern and southern New England and expressed the view that northern New England should have its own direct line to the Hudson river. Maine being the only New England state which does not have such a direct line.

With reference to the objections against inclusion of the Maine Central in a New England regional group, the Maine Central statement said in part:

"More particularly is an all New England system objectionable to the Maine Central from the standpoint of service. We do not believe that joining the Maine Central and the New England lines which intervene between it and the Hudson river would result in an adequate supply of cars, or a more prompt dispatch of the traffic offered. On the contrary, provision for car requirements will, as now, depend upon conditions prevailing in Southern New England, a territory of much greater traffic density, demanding at all times its full complement of cars. In other words, the outlying sections of a New England system would suffer as the Northern New England lines now suffer because of failures to obtain an adequate car supply. The prompt movement of traffic would also be dependent upon conditions existing in the congested sections of southern New England."

Mr. McDonald was questioned as to the matter of car supply. He explained that the Maine Central was not securing proper car supply at present and wanted a new avenue of supply as well as a new outlet for traffic. He was interrogated by Commissioner Eastman at some length as to various angles of the plan offered, notably with reference to the willingness of the Boston & Maine to give up its Worcester, Nashua & Portland line. He was asked as to the probable opinion of the Maine Central directors as to inclusion of the Maine Central in a Boston & Maine-New York Central merger which because it would include the entire Boston & Maine would obviate the necessity of separating from that property the W. N. & P. line. President McDonald said that former control of the Maine Central by the Boston & Maine had not helped the Maine Central.

Mr. McDonald was followed by George A. Eaton, freight traffic manager of the Maine Central. Mr. Eaton presented exhibits essaying to show the difference in industrial and railroad conditions between northern and southern New England. With the use of a map he indicated the routes used by Maine Central traffic. On interrogation by Commissioner Hall, he said that very little traffic to or from the Maine Central moved by Worcester and the Boston & Albany to the west. He also said that in 1922 of the total Maine Central traffic to points in the United States outside of New England 30.8 per cent moved over differential routes. The differential rates apply only on westbound traffic. The Maine Central, he said, has a haul about 200 miles longer on traffic moving over the differential routes than on that moving over the direct lines via Portland.

GOVERNOR WILLIAM E. SWEET of Colorado has joined the ranks of the numerous civic organizations which are opposing the merger of the Denver & Rio Grande Western either with the Atchison, Topeka & Santa Fe or the Missouri Pacific. The support of the governor was pledged to the Allied Council of Improvement Associations of Denver, which is opposing both proposals.

Contract Locomotive Repairs in Ordnance Plant

Buildings Adapted to Railroad Work by Morgan Engineering Company with Little Special Equipment

THE DRASTIC REDUCTION of mechanical department forces made by the railroads in 1921, led to the development of considerable demand for outside shop capacity for heavy locomotive repairs. The Morgan Engineering Company, Alliance, Ohio, manufacturers of overhead cranes and other heavy rolling mill equipment, at that time had a large plant, unequipped except with cranes, that had been built during the war for the manufacture of heavy ordnance. Accordingly, after considerable study, this company developed a satisfactory form of contract, based on a sufficiently detailed analysis of the work performed in completely overhauling a locomotive to cover all usually performed operations, but retaining a degree of flexibility sufficient to take care of all work the need for which becomes evident only after a locomotive has been stripped. An organization was then built up and the Morgan Company entered the field of contract locomotive repairs.

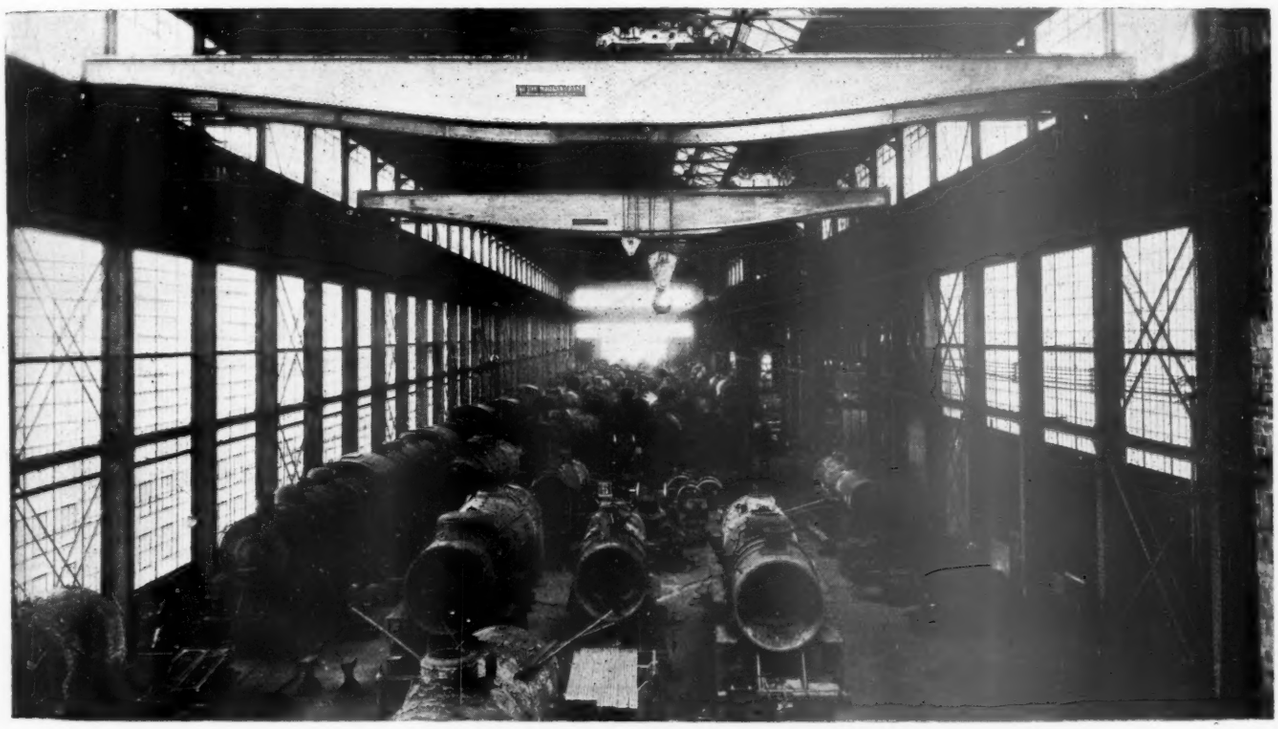
The first locomotives were repaired during the latter part of 1921. Owing to unsettled labor conditions, however, operations did not actively get under way until the fall of 1922.

A floor plan of the building in which the locomotive repair work is conducted, is shown in the drawing. The building consists of what may be termed a header bay, 840 ft. long by 90 ft. wide, from one side of which opens a series of parallel bays extending out at an angle of about 34 deg. from the header bay. As these bays all terminate in a single end wall, they vary in length from about 115 ft., in the case of the short bay opening into the header bay nearest its southern end, to about 530 ft. for the east bay opening from the north end of the header bay. The building is of steel frame construction with brick curtain walls at the lower portion of the sides, above which there is an unbroken expanse of steel sash. Additional light is admitted through glazed openings in the roof.

This building is located in an enclosure adjoining the south end of the main plant yard, in which its manufacturing operations are conducted. The two enclosures are separated by a street, but communication is maintained between them by continuous industrial tracks and by the plant roadways, over which material is transported to and from the locomotive shop by motor truck.

The Erecting Shop

The most interesting feature of the locomotive repair shop is the method of handling erecting shop work. The erecting shop occupies the long bay from which open the parallel bays, and has floor space for 70 locomotives in addition to those on the stripping and wheeling tracks. This building originally was not equipped with pits and had but two tracks running through it, one along either side. With practically no changes in the floor construction it has been adapted to effective use as a locomotive erecting shop by the portable structural steel stools on which the locomotives are supported. These are of sufficient height to permit work to be done under the engines after they have been stripped and placed on their "spots" without the necessity of floor depressions and with better lighting under the locomotives than normally found where they are set over pits. The only change in this shop has been the construction of pits along the track on the east side, which is used as a wheeling and



The Morgan Locomotive Erecting Shop Has No Working Pits

finishing track. As will be seen from the illustration, the locomotives are placed on their spots in "eschelon" so that the tubes may be removed from the front end of one locomotive without interference from the locomotive next in front of it.

At the north end of the erecting bay is what is known as the testing block. Here the first spot in each of the four rows between the stripping and the wheeling tracks is devoted to the making of hydrostatic tests.

The erecting bay is served by three Morgan cranes, all operating on the same ways. The capacity of the first toward the north end of the shop is 75 tons, of the next, 40 tons, and of that toward the south end of the shop, 25 tons. Slings are used at both ends of the locomotives when lifting with the cranes. In moving a locomotive about the shop, the sling from the 75-ton crane is placed around the barrel of the boiler just ahead of the firebox, while the 40-ton crane lifts the front end.

The stripping track accommodates six locomotives. Here the engines are completely stripped, the parts removed to the lye vat, cleaned and delivered to the machine shop by the stripping gang. After stripping, the locomotive is unwheeled and moved to the "spot" assigned to it, where the boiler, frame and cylinder work is done. When ready to be assembled, the boiler and frames are moved by crane to the wheeling track. This track has a capacity for ten engines, on seven stations. The engines are moved from station to station as the work of assembling progresses, until at the final station the tank is coupled up and the engine pulled out of the shop, ready to be fired up.

Locomotives are broken in on the tracks of the Morgan Engineering Company, some of which are long enough to permit of thorough testing. When accepted by the inspectors representing the railroad company, the rods are taken down and the engine prepared for shipment.

Other Departments

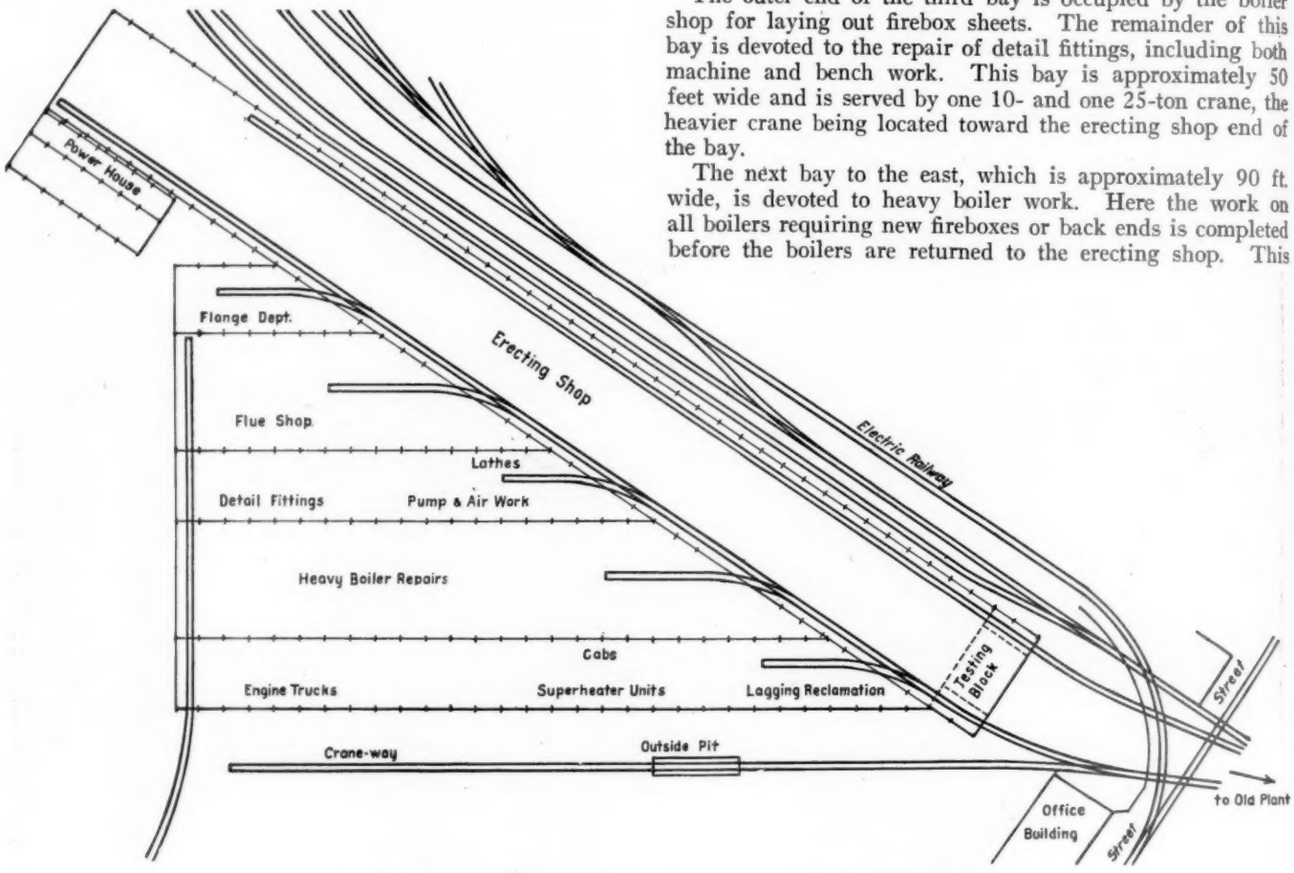
The drawing shows the general arrangement of the departments which occupy the parallel bays opening into the erecting shop. Like the erecting shop, each of these bays is well equipped with overhead cranes, and a comparatively small amount of special equipment has been installed.

Starting at the south end of the erecting shop, the first of these bays is occupied by the flanging department. This bay is about 50 ft. wide and is served by one 40-ton overhead crane. The next bay, which is about 90 ft. wide, is occupied by the flue shop. Two wet type rattlers, as well as the welding and testing equipment are located inside the shop.

The outer end of the third bay is occupied by the boiler shop for laying out firebox sheets. The remainder of this bay is devoted to the repair of detail fittings, including both machine and bench work. This bay is approximately 50 feet wide and is served by one 10- and one 25-ton crane, the heavier crane being located toward the erecting shop end of the bay.

The next bay to the east, which is approximately 90 ft. wide, is devoted to heavy boiler work. Here the work on all boilers requiring new fireboxes or back ends is completed before the boilers are returned to the erecting shop. This bay is equipped with one 25-ton crane toward the south end, and a 40-ton crane toward the erecting shop end. The floor space at the inner end of the bay is available for spotting a number of locomotives. Engines to be placed in this space, after being unwheeled, are moved by the erecting shop cranes to the wheeling track on the east side of the erecting bay, and placed on two car trucks provided with heavy timber bolsters. The engine, thus mounted, is then hauled into the lateral bay, over the track shown in the drawing, by using a cable attached to the 40-ton crane. This brings it under the cranes of the lateral bay, by means of which it can be moved to its assigned space on the floor.

The outside bay is about 50 ft. wide. It is devoted to engine truck repairs, cabs, and superheater unit storage. Space is also here provided, just off the erecting shop, for lagging storage and reclamation. This bay, which is equipped with two 10-ton cranes, was formerly used as a tender repair shop. Tender work, however, has now been transferred to one of

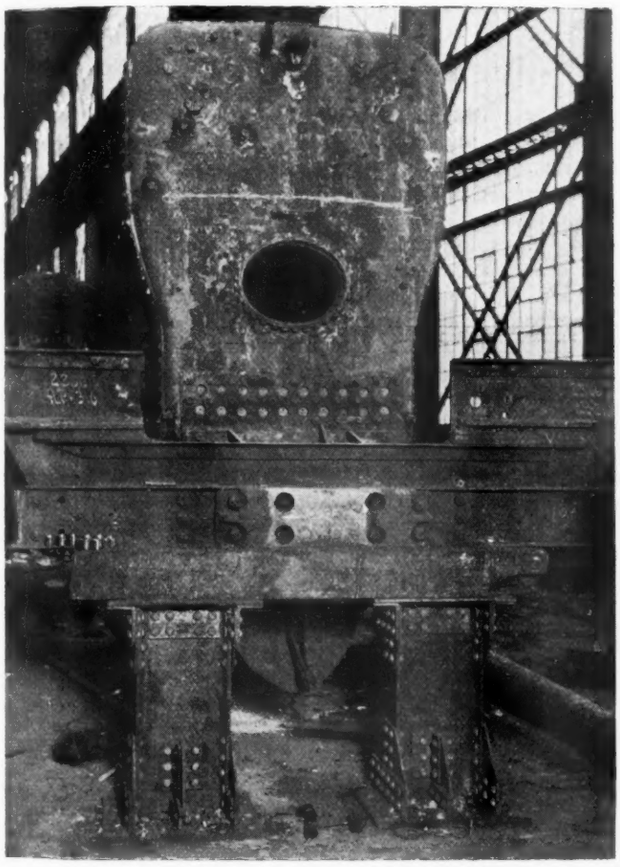


Layout of Morgan Engineering Company Locomotive Repair Shop

the buildings in the manufacturing plant, which was formerly occupied by the iron foundry.

Standardization of Operations Impossible

The work of the shop is necessarily affected by the fact that the shop is usually working on locomotives for from



Structural Steel "Stools" on Which Locomotives are Supported in the Erecting Shop

seven to ten different railroads, each of which has its own standards, not only as to the type and size of details, but as to shop methods. This is particularly true with respect to the boiler work. All boiler welding is done by the electric process, but there is considerable variation in the amount of welding called for as well as in the type of the welds. All firebox sheets must be hand flanged as the contracts with each road usually include locomotives of so many different types that it is impracticable to provide flanging dies.

Each railroad has its own inspection organization, and both the Morgan Engineering Company and the railroad inspectors are provided with complete sets of drawings of the locomotives passing through the shop. Much of the material, particularly brass and iron castings and all special fittings, is furnished by the railroad. Each railroad is provided with its own storehouse in charge of its own storekeeper. These stores are housed in small buildings of frame construction, adjoining the south wall of the parallel bays.

Shop Organization and Output

All heavy machine work, such as that required on running gear parts, motion work, cylinders and other castings, is handled in the machine department of the manufacturing plant, where the parts are routed through the shop and assigned to machines along with the material going through the plant on production jobs. All blacksmith operations are also handled at the manufacturing plant.

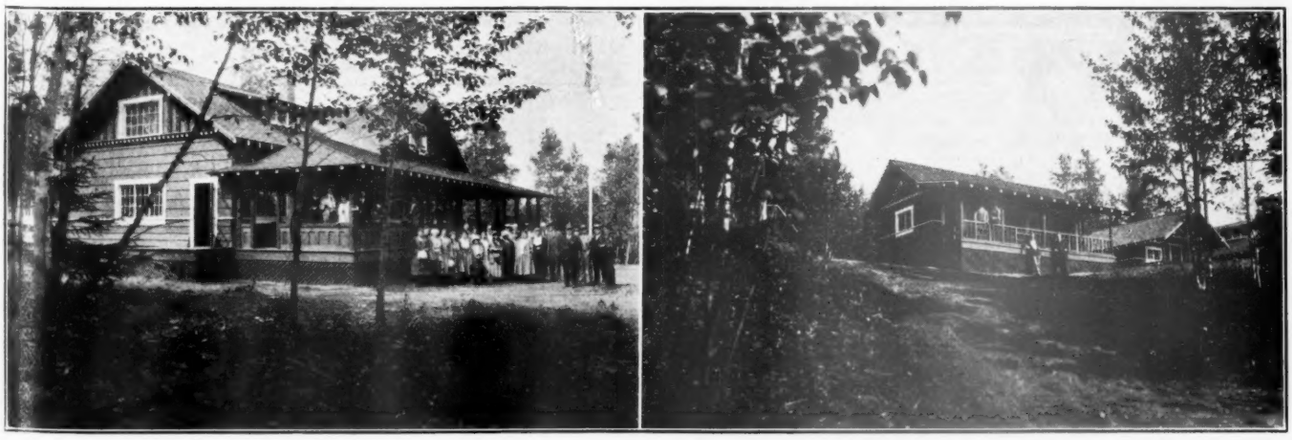
To a large extent the employees engaged in locomotive repair work, aside from those in the manufacturing departments, are semi-skilled men, rather than fully qualified mechanics. The work is, therefore, specialized in all of the departments under the jurisdiction of the superintendent of the locomotive repair department.

1,000 Men Employed

During the month of June, there were an average of about 1,000 men actually working on locomotive repairs, approximately 250 of whom were boiler makers and helpers, 300 were employed in the machine and forge departments, and 450 on the erecting floor, air brake repairs and in the tank shop. From 725 to 750 of these men were located in the departments housed in the locomotive shop building.

During the month of June the output was 36 locomotives, none of which, of course, required less than Class 3 repairs—many of them running very heavy. Of the 40 engines completed during the month of July, two boilers required complete new back ends; seven required new fireboxes; 20 required new back tube sheets, door sheets and inside side sheets.

The remaining 11 required either new back flue sheets or new side sheets and patches.



Left, Central Pavilion, and Right, Bungalows, at One of the C. P. R.'s New Bungalow Colonies in Ontario, Three of Which Were Opened During the Summer

Annual Accident Bulletin for 1922

THE INTERSTATE COMMERCE COMMISSION has issued Accident Bulletin No. 87, containing the record of collisions, derailments and other accidents occurring on the railroads of the United States during the 12 months ending with December 31, 1922. Bulletin No. 86 contained the regular quarterly statistics, leaving the annual tables for this separate pamphlet of 107 pages.*

The total number of casualties shown in the annual tables for 1922 is 141,196; made up of 6,325 persons killed and 134,871 injured. These figures are somewhat larger than those for 1921, as shown in the large table. The total locomotive mileage of the railroads of the country in 1922, was about 1,600 millions, which is a little over 3 per cent above the total for 1921. Most of the totals in the casualty tables are considerably more than 3 per cent above 1921; though most of them are smaller than in 1920. The annual number of passengers killed in train accidents (106 in 1922) has not varied greatly in four years.

The total number of train accidents, as shown in the smaller double-column table, varies but little from 1921; and the same is true of the total damage to cars, locomotives and roadway—nearly $23,000,000 in each year. In each of these two years this damage was far below the total recorded in 1920.

As in former bulletins the statistics of fatalities at highway grade crossings are recorded in great detail. The totals of the highway crossing casualties in 1922 were 1,810 persons killed and 5,382 injured. Not all of these were automobile accidents; 451 of 1,810 fatal cases were classified as pedestrian, horse-drawn vehicles, etc.; and the non-fatal items show similar proportions. The crossing casualties for three years totaled:

	1922		1921		1920	
	Killed	Injured	Killed	Injured	Killed	Injured
Non-trespassers	1,714	5,219	1,599	4,702	1,691	4,804
Trespassers	96	163	106	166	100	273
	1,810	5,382	1,705	4,868	1,791	5,077

The bulletin contains the usual full and detailed analyses of all the data in the record. Twenty-eight pages are given up to tables filled mostly with classified lists of the casualties on each of the roads in each geographical district, including, however, only Class I roads. The causes of collisions are classified more in detail than heretofore, one large table showing errors in train orders, with information as to whether the order was on Form 19 or Form 21. Of 68 collisions, due to errors in connection with train orders, causing 45 fatal and 442 non-fatal injuries, 28 cases are entered as due to over-running of meeting point. Three cases were due to error in transmission or copying an order. These three were sent by telegraph; no errors are recorded in transmission by telephone.

A table in the appendix gives the total number of grade crossings in the United States in 1922 as 256,362; which includes 10,087 crossings with other steam railroads, and 4,583 with electric, interurban or street railways; leaving 241,692 crossings with highways. During the year under review 705 crossings were eliminated, as follows: Crossings with other steam railways, 50; with interurban or street railways, 43 and with highways, 612.

*These bulletins are prepared by the Bureau of Statistics. Bulletins containing reports of investigations of the more prominent train accidents are prepared by the Bureau of Safety. The last preceding annual statistical bulletin was noticed in the *Railway Age* of October 7, 1922, page 652. The four bulletins reporting investigations which were completed in the year 1922 were reported in the *Railway Age* of June 17, 1922, page 1483; September 2, page 426; December 30, page 1239, and March 24, 1923, page 815.

F. LAVIS, consulting engineer of New York, sailed on September 19 for Bogota, Colombia, where he is to make an examination of certain railroad projects which the Colombian government has under consideration.

TABLE A—CASUALTIES TO PERSONS IN RAILROAD ACCIDENTS—FOUR YEARS

	1922		1921		1920		1919	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Passengers								
In train accidents	106	3,101	110	2,601	95	4,631	110	4,549
In train service accidents	119	3,703	116	3,543	169	3,825	191	3,598
Total	225	6,804	226	6,144	264	8,456	301	8,147
Employees on Duty								
In train accidents	253	1,711	195	1,296	422	3,385	359	2,955
In train service accidents	988	30,480	901	27,228	1,685	43,535	1,334	33,325
Total	1,241	32,191	1,096	28,524	2,107	46,920	1,693	36,280
Total (a) passengers and (b) employees on duty	1,466	38,995	1,322	34,668	2,371	55,376	1,994	44,427
Employees not on duty	57	243	41	223	91	314	66	321
Other Persons, not Trespassing								
In train accidents	7	26	3	16	11	86	9	61
In train service accidents*	1,891	5,881	1,740	5,346	1,856	5,642	1,873	5,134
Total	1,898	5,907	1,743	5,362	1,867	5,728	1,882	5,195
Trespassers†								
In train accidents	47	58	49	141	48	77	32	63
In train service accidents	2,383	2,786	2,432	2,930	2,118	2,291	2,521	2,595
Total	2,430	2,844	2,481	3,071	2,166	2,368	2,553	2,658
Total in train and train service accidents	5,851	47,989	5,587	43,324	6,495	63,786	6,495	52,601
Non-train accidents	474	86,882	409	77,361	463	104,522	483	96,452
Grand Total	6,325	134,871	5,996	120,685	6,958	168,308	6,978	149,053

*This item includes the bulk of the casualties at highway grade crossings. See text.

†A small percentage of the persons classed as trespassers represents employees.

TABLE B—TOTAL NUMBER OF TRAIN ACCIDENTS—FOUR YEARS

	1922				1921				1920				1919			
	No.	Damage	Killed	Injured	No.	Damage	Killed	Injured	No.	Damage	Killed	Injured	No.	Damage	Killed	Injured
Collisions:	5,611	$6,176,780	195	2,536	5,102	$4,657,390	130	1,839	10,110	$9,078,110	253	3,840	6,904	$5,696,600	242	3,941
Derailments:	13,155	14,969,250	187	2,226	13,615	16,518,440	132	1,854	22,477	22,987,790	194	3,549	15,897	15,571,560	198	3,023
Other train accidents:	2,826	1,722,510	34	160	2,534	1,577,520	47	231	3,726	2,063,960	89	743	2,795	1,407,660	77	711
	21,592	$22,868,540	416	4,922	21,251	$22,753,350	309	3,924	36,313	$34,129,860	536	8,132	25,596	$22,675,820	517	7,675

General News Department

The Wabash Railway roundhouse at Hamilton, Ill., was destroyed by fire on September 19. Two engines were damaged and a quantity of tools and supplies was lost.

The Railway Fire Protection Association will hold its annual meeting at the Cleveland Hotel, Cleveland, Ohio, on Tuesday, Wednesday, and Thursday, October 16, 17 and 18.

The California Limited of the Atchison, Topeka & Santa Fe was derailed near Hot Springs Junction, Arizona, on September 20, and four trainmen were killed. The locomotive and the first three cars left the track.

The Central of Georgia Railroad Clerks' Association will hold its second annual convention at the Ansley Hotel, Atlanta, Ga., on Saturday and Sunday, October 20 and 21. The president of the association is H. C. Gould, Savannah.

The hearing before Examiner Fowler of the Interstate Commerce Commission on the tentative report of the commission's depreciation section on regulations for the establishment of depreciation accounts, originally set for October 1 at Washington, has been postponed to November 7.

A special committee has been appointed by the Chicago Shippers' Conference Association to study the freight terminal question at Chicago and to report at the organization's annual meeting on November 7. The association contends that current proposals for the consolidation of Chicago terminal facilities fail to make adequate provision for the growing freight traffic of the city.

The Interstate Commerce Commission's report to the President on the condition of equipment for the month of August shows that out of 4,630 locomotives inspected by the commission's bureau during that month 57 per cent were found defective and 483 were ordered out of service. Of 91,120 freight cars inspected, 5.2 per cent were found defective and of 1,583 passenger cars, 1.1 per cent were found defective.

Railway Business Association Annual Meeting on November 8

The Railway Business Association will hold its annual meeting and dinner at the Hotel Commodore, New York, on November 8. The speakers at the dinner will be Julius Kruttschnitt, chairman of the Southern Pacific Company, and James R. Howard, president of the National Transportation Institute. Dinner reservations are obtainable at $9 a plate.

C. N. R. Toronto Employees Visit Buffalo on Annual Outing

Employees of the Canadian National Railways and their families resident in the Toronto district to the number of almost 4,000 visited Buffalo on a one-day excursion on September 19 in special trains provided by the C. N. R. The excursion to Buffalo was an annual event before the war and this is its first revival since that time, but it is expected to make it a regular annual event hereafter.

Broad Street Station Restored

The Pennsylvania Railroad announces that with the discontinuance of summer time and the inauguration of the regular winter train schedules on Sunday, September 30, Broad Street Station, Philadelphia, will be put fully in use and the train service it enjoyed previous to the fire of June 11 will be restored. The work of rebuilding the train shed has reached a point where it is possible to run all trains in and out of the station. The time of short distance trains which was advanced in the Spring to conform to local daylight-saving, will be run one hour later.

"Industry"

This is the title of a little monthly magazine issued by the traffic department of the Lehigh & New England, the first issue of which, that of September, has just come to hand. This little magazine is 5¼ in. by 6¾ in. in size and has 14 well-illustrated and attractively printed pages. The September issue contains an article on "What to Look for in Locating a Plant," by J. L. Warner, of the du Pont Engineering Company. The magazine will be devoted to the consideration of the subject of the determination of profitable industrial locations and will be sent free of charge to any industrial executive who wishes to receive it.

Sabotage on the New Haven

The Public Utilities Commission of Connecticut, reporting on the derailment of a night passenger train on the New York, New Haven & Hartford at Burnside, four miles east of Hartford, on the night of June 6, says that the derailment was caused by the loosening of brake rigging on the leading locomotive of the train. The railroad company declared that the cause of the trouble was sabotage, evidently the work of striking shopmen or their sympathizers, committed a few minutes before the locomotive began its trip at Hartford; and the report of the commission substantially confirms this view of the railroad company. While the engineman was busy on one side of the engine, the persons who committed the crime evidently stole up to the other side, and removed a pin fastening the brakehead. The train was the State of Maine express.

Filling a Long-Felt Want

One of the humble duties of the custodian of a large railway station nowadays consists in that portion of his floor-cleaning function which clears stone and concrete floors of the dabs of chewing gum which hundreds of people try, every day, to imbed in the floor in such a way that the offensive mass can never be got out; and one of the latest inventions in the railroad world is an electric motor, operating a 4-in. blade, by which this unpleasant job is accomplished in about one-fourth the time that has been possible under former conditions. That is to say, the one man operating the machine can, in a given time, perform work equivalent to that formerly done by four men. One of these motor-scrapers is in use at the Pennsylvania Station, New York City. It works with a motion similar to that of a tie-tamper. It is mounted on a two-wheel carriage, running on rubber tires, and is managed by means of a long handle, similar to that of a vacuum carpet cleaner. It is made by the Electro-Magnetic Tool Company, 5 Great Jones street, New York.

C. N. R. Neebing Terminal in Service

The Canadian National's new terminal at Neebing, near West Fort William, Ont., has been placed in service. The terminal was built to expedite the handling of grain traffic most of which goes via lake from this point eastward.

The Neebing yard is designed to handle 2,000 cars a day classifying them for distribution to the elevators and vessels. Most of the cars will be put over the hump. There are 8 receiving tracks with a capacity of 80 cars each; an eastbound classification yard with 20 tracks of a total capacity of 1,250 cars; a westbound departure yard of 13 tracks, each with a capacity of 80 cars, and repair tracks with a capacity of 108 cars.

The buildings and equipment include a 24-stall roundhouse; an 85-foot electrically operated turntable; a 300-ton coaling station; a 150,000-gallon steel water tank; a 1,000-gallon oil tank; an automatic electrically driven ash remover and loader as well as other modern mechanical features in and about the repair yards, engine houses and plant.

Operating Statistics of Large Steam Roads—Selected Items for the Month of July, 1923,

Region, road and year	Average miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (thousands)	Car-miles: Per cent loaded	Ton-miles (thousands): Gross, Excluding locomotive and tender	Ton-miles (thousands): Net, Revenue and non-revenue	Average number of locomotives on line daily: Serviceable	Unserviceable	Per cent unserviceable	Stored
New England Region:												
Boston & Albany	1923	394	294,513	311,668	29,010	5,520	65.5	300,709	122,278	114	28	19.6	...
	1922	394	232,190	244,969	23,415	4,423	69.3	209,668	74,005	112	31	21.5	...
Boston & Maine	1923	2,455	612,800	679,505	64,305	12,730	68.0	677,589	281,397	333	140	29.6	...
	1922	2,455	484,969	543,775	42,671	11,245	75.3	517,752	205,627	318	125	28.3	39
N. Y., New H. & Hartford	1923	1,974	550,194	588,920	39,112	12,821	67.3	685,542	292,239	303	81	21.0	2
	1922	1,976	431,276	470,649	25,939	11,454	73.4	530,317	210,789	266	79	22.9	22
Great Lakes Region:												
Delaware & Hudson	1923	886	420,456	589,819	53,291	11,315	63.9	756,448	390,184	238	61	20.2	15
	1922	887	227,653	305,365	30,192	6,394	73.3	340,886	156,871	307	8	2.6	197
Del., Lack. & Western	1923	993	545,999	659,899	102,682	16,736	67.6	939,622	432,839	280	73	20.7	6
	1922	994	433,070	516,024	102,500	13,933	73.3	678,399	284,549	302	63	17.2	39
Erie (inc. Chic. & Erie)	1923	2,309	1,012,373	1,152,774	70,568	36,323	68.9	2,136,286	996,448	676	136	16.8	127
	1922	2,309	762,044	826,198	65,316	26,246	69.4	1,410,470	594,201	509	251	33.0	78
Lehigh Valley	1923	1,317	603,169	666,365	75,910	17,459	70.2	1,033,695	520,076	378	170	31.0	33
	1922	1,316	458,879	508,933	71,774	13,233	71.9	707,946	321,178	443	114	20.5	164
Michigan Central	1923	1,827	531,816	541,696	21,585	17,563	65.4	954,629	386,920	319	79	79.8	43
	1922	1,827	482,084	488,279	23,274	16,848	68.8	841,441	318,343	311	91	22.5	88
New York Central	1923	6,469	2,241,708	2,553,695	197,813	80,248	61.9	4,923,167	2,220,611	1,321	417	24.0	308
	1922	6,468	1,573,822	1,737,879	126,084	58,579	70.8	3,028,394	1,267,935	1,040	653	38.6	330
New York, Chic. & St. L.	1923	1,670	683,799	689,720	5,522	19,195	67.0	1,035,855	423,393	205	78	27.5	7
	1922	1,670	612,212	622,265	1,866	17,941	72.0	900,558	370,920	224	64	22.2	35
Pere Marquette	1923	2,197	390,759	404,021	8,846	9,233	67.3	547,761	250,580	175	40	18.6	10
	1922	2,182	299,199	294,754	5,105	7,117	72.3	362,332	162,618	162	49	23.2	17
Pitts. & Lake Erie	1923	231	170,225	173,600	1,909	6,122	65.2	459,414	276,181	74	20	21.1	10
	1922	228	90,987	95,849	713	2,927	68.8	191,525	110,091	65	20	23.8	15
Wabash	1923	2,418	625,354	655,518	12,628	18,239	70.1	977,066	406,846	245	89	26.6	...
	1922	2,418	494,732	516,192	5,088	15,265	77.3	733,353	314,893	282	54	16.0	32
Ohio-Ind.-Allegheny Region:												
Baltimore & Ohio	1923	5,212	2,244,648	2,584,351	167,548	59,362	63.5	3,858,407	1,946,283	1,098	180	14.1	79
	1922	5,235	1,181,969	1,344,521	87,285	32,041	73.8	1,738,520	858,448	671	686	50.6	54
Central of New Jersey	1923	695	285,233	310,716	37,546	7,001	62.2	448,688	220,871	203	66	24.5	...
	1922	692	227,461	243,597	24,762	4,956	70.1	246,809	108,288	226	33	12.7	57
Chicago & Eastern Illinois	1923	945	230,705	232,270	4,342	5,807	64.4	336,419	160,332	130	58	30.8	33
	1923	945	201,498	204,434	3,486	4,886	71.1	252,546	118,596	115	62	34.8	29
Cleveland, Cin., Chi. & St. L.	1923	2,377	703,636	741,267	6,733	21,485	61.5	1,368,091	644,111	341	110	24.4	45
	1922	2,383	578,038	604,578	10,240	17,764	65.9	1,010,760	462,099	250	199	44.4	13
Elgin, Joliet & Eastern[1]	1923	460	144,390	155,654	6,218	4,104	64.1	326,095	178,292	83	17	17.2	2
	1922	459	90,527	97,434	4,244	2,870	71.2	195,263	107,985	86	21	19.8	21
Long Island	1923	393	46,084	56,868	9,761	579	58.1	35,326	13,757	37	17	31.2	...
	1922	394	42,268	44,040	8,214	461	61.0	25,612	9,187	36	8	17.8	1
Pennsylvania System	1923	10,907	5,372,641	5,895,653	453,075	143,004	63.3	9,826,721	4,937,697	2,671	663	19.9	31
	1922	10,903	4,138,189	4,417,758	293,461	115,140	69.2	6,830,747	3,275,724	2,589	783	23.2	599
Philadelphia & Reading	1923	1,118	678,699	752,641	78,818	17,267	64.5	1,170,449	628,566	364	104	22.3	63
	1922	1,119	432,878	466,829	46,012	10,404	70.0	600,729	298,737	389	73	15.8	227
Pocahontas Region:												
Chesapeake & Ohio	9123	2,553	926,165	1,014,570	27,188	28,352	57.9	2,204,844	1,202,860	464	85	15.5	30
	1922	2,548	597,739	659,513	15,674	17,351	60.0	1,319,465	708,804	357	193	35.1	35
Norfolk & Western	1923	2,228	885,533	1,096,271	36,161	25,839	60.5	2,073,821	1,130,519	546	158	22.4	57
	1922	2,228	787,301	977,073	30,522	21,159	59.4	1,612,112	872,036	617	99	13.8	117
Southern Region:												
Atlantic Coast Line	1923	4,861	657,883	661,303	10,107	15,507	65.6	823,077	342,701	317	82	20.5	37
	1922	4,922	536,756	540,202	9,473	12,100	70.2	596,704	245,859	322	87	21.3	19
Central of Georgia	1923	1,907	341,483	346,047	7,729	6,566	68.9	353,615	151,178	125	13	9.1	...
	1922	1,907	267,346	273,880	4,540	5,595	75.5	272,950	119,036	119	8	6.0	...
I. C. (inc. Y. & M. V.)	1923	6,190	1,872,836	1,886,516	40,387	50,879	63.1	3,192,644	1,428,408	732	107	12.7	1
	1922	6,137	1,801,871	1,840,274	48,819	48,012	63.9	2,946,308	1,312,072	738	91	11.0	11
Louisville & Nashville	1923	5,032	1,698,996	1,808,779	67,916	30,924	61.2	2,029,627	980,590	584	119	16.9	...
	1922	5,021	1,362,840	1,466,627	47,338	24,370	66.8	1,426,449	675,223	618	74	10.6	1
Seaboard Air Line	1923	3,553	439,229	449,436	13,388	9,841	70.3	514,110	218,159	200	49	19.6	12
	1922	3,537	394,245	400,189	10,431	8,567	72.1	426,470	175,652	159	117	42.4	...
Southern Ry	1923	6,942	1,523,700	1,564,371	34,575	33,987	69.1	1,797,764	782,579	771	146	16.0	...
	1922	6,942	1,229,021	1,257,320	39,880	27,123	75.4	1,308,649	563,848	840	207	19.8	17
Northwestern Region:												
Chic. & Northwestern	1923	8,463	1,628,357	1,698,045	21,204	36,742	61.0	2,182,693	945,631	910	190	17.3	44
	1922	8,419	1,253,211	1,298,987	26,157	29,303	70.4	1,508,570	609,232	782	259	24.9	74
Chic., Milw. & St. Paul	1923	11,007	1,748,706	1,796,647	70,538	44,616	63.0	2,551,312	1,113,301	868	181	17.2	35
	1922	11,027	1,497,565	1,539,897	66,884	38,720	68.2	2,050,219	904,925	814	245	23.2	114
Chic., St. Paul, M. & O.	1923	1,726	308,099	338,941	14,777	6,017	64.9	326,315	130,063	160	44	21.5	12
	1922	1,726	350,432	385,214	19,089	6,411	68.9	378,460	159,020	156	56	26.3	28
Great Northern	1923	8,256	880,932	910,478	44,533	26,731	61.0	1,688,758	829,407	566	175	23.6	92
	1922	8,263	740,175	760,943	29,315	20,987	65.2	1,255,500	627,627	572	147	20.4	91
M., St. P. & S. Ste. M.	1923	4,374	539,637	546,087	8,130	12,607	69.5	663,573	312,193	287	56	16.2	2
	1922	4,355	508,741	513,773	9,588	11,662	72.8	581,756	268,282	302	49	13.8	12
Northern Pacific	1923	6,425	838,681	881,594	58,105	22,377	63.8	1,325,623	569,366	549	140	20.3	36
	1922	6,389	840,498	873,022	38,368	22,577	76.4	1,181,845	552,955	573	127	18.2	85
Ore.-Wash. R. R. & Nav. Co.	1923	2,143	200,237	211,301	21,555	4,700	63.3	273,748	118,498	143	28	16.4	11
	1922	2,143	206,552	226,092	31,747	4,973	72.6	274,975	130,082	133	29	17.8	1
Central Western Region:												
Atch., Top. & S. Fe	1923	9,869	1,665,936	1,772,647	93,987	47,602	66.9	2,683,035	1,021,246	730	179	19.7	64
	1922	9,798	1,594,010	1,676,876	78,860	44,547	69.4	2,434,903	960,121	777	157	16.8	149
Chic. & Alton	1923	1,010	321,508	327,039	4,762	7,753	64.1	458,427	199,657	119	35	22.9	11
	1922	1,010	191,170	193,656	4,584	4,433	72.7	234,110	107,546	77	65	45.7	16
Chic., Burl. & Quincy	1923	9,338	1,545,380	1,603,054	80,153	40,943	62.4	2,456,004	1,117,839	762	205	21.2	36
	1922	9,326	1,375,209	1,434,411	68,546	36,226	68.9	1,969,343	890,201	762	214	21.9	106
Chic., Rock I. & Pacific	1923	7,635	1,490,060	1,523,916	16,372	32,486	62.8	1,852,299	751,313	524	262	33.4	8
	1922	7,662	1,393,429	1,406,651	18,583	32,087	72.3	1,640,442	690,435	581	182	23.8	44
Denver & R. G. Wn	1923	2,593	245,848	307,743	62,830	5,051	67.6	303,653	148,787	222	118	34.6	1
	1922	2,593	227,614	274,433	59,283	4,971	67.8	302,259	149,436	234	84	26.4	29
Oregon Short Line	1923	2,367	340,384	355,903	23,839	7,586	60.4	465,744	199,100	159	54	25.3	15
	1922	2,360	308,550	324,710	26,697	6,922	70.4	389,736	179,661	183	47	20.3	51
Southern Pacific	1923	6,938	1,495,628	1,679,728	293,163	41,798	62.4	2,547,135	963,919	630	141	18.2	4
	1922	6,924	1,155,279	1,316,178	238,595	33,456	67.2	1,888,852	735,913	595	173	22.5	16
Union Pacific	1923	3,709	1,137,120	1,172,233	74,693	34,394	59.9	2,046,339	689,112	427	90	17.3	108
	1922	3,707	790,398	801,227	38,705	25,613	69.8	1,359,975	524,978	416	106	20.3	167
Southwestern Region:												
Gulf, Colo. & S. Fe	1923	1,897	282,498	290,501	5,217	7,278	63.8	437,816	197,120	119	20	14.4	12
	1922	1,895	201,032	210,233	5,950	5,425	71.3	293,160	135,234	131	21	14.0	31
Missouri-Kans.-Texas	1923	1,871	287,593	288,061	9,398	8,811	60.0	498,595	189,624	144	87	37.8	57
	1922	1,987	237,614	238,771	9,939	6,481	65.6	349,745	143,631	128	69	35.1	56
Mo.-Kans.-Tex. of Texas	1923	1,389	180,093	184,856	4,037	3,959	63.2	231,045	96,489	71	54	43.3	7
	1922	1,738	156,676	160,987	4,956	3,058	69.6	163,284	68,811	67	79	54.0	11
Missouri Pacific	1923	7,112	1,162,955	1,174,170	39,789	27,742	66.4	1,597,004	719,532	418	208	33.2	...
	1922	7,305	914,032	925,672	33,543	23,538	75.5	1,227,077	572,121	414	166	28.6	3
St. Louis-San Francisco	1923	4,683	876,204	890,198	16,479	16,872	65.7	966,298	421,656	365	135	27.0	28
	1922	4,683	795,443	801,031	13,480	14,268	69.0	794,668	356,722	337	105	23.8	3
Southen Pac. Lines (in Tex. and Louisiana)[2]	1923	3,710	606,289	608,012	4,565	12,871	64.4	778,416	335,897	209	79	27.3	17
	1922	3,710	550,375	552,826	5,687	11,341	66.5	652,448	288,029	198	95	32.4	19
Texas & Pacific	1923	1,953	244,756	244,872	1,844	5,932	69.2	319,726	135,700	160	47	22.6	48
	1922	1,953	199,215	199,215	2,289	5,028	70.4	259,987	105,244	112	85	43.1	27

Compiled by the Bureau of Statistics, Interstate Commerce Commission, subject to revision. [1] No passenger train service.
[2] Includes Galveston, Harrisburg & San Antonio, Houston & Shreveport, Houston & Texas Central, Houston East & West Texas, Iberia & Vermillion, Lake Charles & Northern, Louisiana Western, Morgan's La. & Tex. R. R. & S. S. Co., and Texas & New Orleans. [3] No data available.

Compared with July, 1922, for Roads with Annual Operating Revenues above $25,000,000.

Region, road and year	Average number of freight cars on line daily: Home	Foreign	Total	Per cent unserviceable	Stored	Gross tons per train, excluding locomotive and tender	Net tons per train	Net tons per loaded car	Net ton-miles per car-day	Car-miles per car-day	Net ton-mile per mile of road per day	Pounds of coal per 1,000 gross ton-miles including locomotive and tender	Passenger service: Train-miles	Passenger-train car-miles
New England Region:														
Boston & Albany	1923	2,042	6,514	8,556	3.6	....	1,021	416	22.2	461	31.8	10,021	174	311,728	2,088,733
	1922	3,190	4,949	3,139	7.6	...	903	319	16.7	293	25.3	6,060	203	315,568	2,045,056
Boston & Maine	1923	13,518	18,823	32,341	10.9	....	1,106	459	22.1	281	18.7	3,697	168	921,152	5,255,423
	1922	16,125	13,647	29,772	17.3	1,081	1,068	424	18.3	223	16.2	2,702	168	902,644	5,190,788
N. Y., New H. & Hartf.	1923	20,154	21,268	41,422	18.0	....	1,246	531	22.8	228	14.8	4,775	157	1,087,288	7,057,165
	1922	23,517	16,942	40,459	24.4	155	1,230	489	18.4	168	12.4	3,441	162	1,090,111	7,006,312
Great Lakes Region:														
Delaware & Hudson	1923	8,844	9,404	18,248	7.5	....	1,799	928	34.5	690	31.3	14,201	183	225,783	1,300,646
	1922	12,529	4,990	17,519	7.5	6,107	1,497	689	24.5	289	16.1	5,705	192	222,347	1,288,684
Del., Lack. & Western	1923	14,325	10,586	24,911	4.2	....	1,721	793	25.9	560	32.0	14,060	177	513,051	3,860,145
	1922	17,083	7,651	24,734	13.3	379	1,566	657	20.4	371	24.8	9,234	164	509,318	3,809,328
Erie (inc. Chic. & Erie)	1923	25,389	26,922	52,311	10.7	....	2,110	984	27.4	614	32.5	13,918	124	695,559	5,534,727
	1922	35,687	19,266	54,953	19.1	3,921	1,851	780	22.6	349	22.2	8,300	136	691,879	5,195,316
Lehigh Valley	1923	19,482	13,619	33,101	5.5	106	1,714	862	29.8	507	24.3	12,740	164	352,051	2,916,627
	1922	31,457	9,634	41,091	12.6	6,295	1,543	700	24.3	252	14.4	7,871	171	355,319	2,867,678
Michigan Central	1923	10,847	17,816	28,663	8.6	....	1,795	728	22.0	435	30.2	6,833	113	628,842	5,504,163
	1922	15,388	13,495	28,883	16.6	....	1,745	660	18.9	356	27.3	5,622	109	603,046	5,285,851
New York Central	1923	58,390	92,713	151,103	8.1	5,009	2,196	991	27.7	474	27.7	11,074	114	2,718,183	22,512,416
	1922	86,151	52,246	138,397	18.0	15,767	1,924	806	21.6	296	19.3	6,324	118	2,611,312	21,125,349
New York, Chic. & St. L.	1923	4,834	14,502	19,336	10.8	....	1,515	619	22.1	706	47.8	8,181	123	220,116	1,194,323
	1922	6,177	11,372	17,549	14.1	369	1,472	606	20.7	682	45.8	7,167	119	220,750	1,193,036
Pere Marquette	1923	8,536	15,746	24,282	4.6	....	1,401	641	27.1	333	18.2	3,679	123	319,134	1,822,394
	1922	10,112	10,486	20,598	12.9	200	1,249	560	22.8	255	15.4	2,404	135	273,283	1,580,482
Pitts. & Lake Erie	1923	8,897	12,970	21,867	14.9	....	2,699	1,622	45.1	407	13.8	38,532	71	120,924	671,159
	1922	18,585	10,278	28,863	32.3	4,914	2,105	1,210	37.6	123	4.8	15,581	93	119,635	660,177
Wabash	1923	10,417	12,368	22,785	3.3	413	1,562	651	22.3	576	36.9	5,428	132	506,881	3,025,010
	1922	11,723	11,314	23,037	11.3	554	1,482	636	20.6	441	27.6	4,201	131	459,669	2,738,862
Ohio-Ind.-Allebreny Region:														
Baltimore & Ohio	1923	56,660	45,583	102,243	3.6	....	1,719	867	32.8	614	29.5	12,046	168	1,532,547	9,954,775
	1922	67,341	37,381	104,722	14.7	5,317	1,471	726	26.8	264	13.4	5,290	196	1,396,119	8,716,297
Central of New Jersey	1923	12,822	14,037	26,859	11.5	....	1,573	774	31.5	265	13.5	10,258	172	416,173	2,083,368
	1922	20,268	8,311	28,579	6.0	11,245	1,085	476	21.8	122	8.0	5,050	216	414,173	2,109,320
Chicago & Eastern Ills.	1923	12,947	5,199	18,146	18.4	....	1,458	696	27.6	285	16.0	5,472	172	235,065	1,459,408
	1923	15,793	5,042	20,835	18.9	6,584	1,253	589	24.3	184	10.6	4,048	148	206,865	1,351,673
Clev., Cin., Chic. & St. L.	1923	12,319	24,081	36,400	6.1	....	1,944	915	30.0	571	30.9	8,743	120	720,414	4,543,816
	1922	17,563	20,172	37,735	15.4	7,165	1,749	799	26.0	395	23.1	6,256	121	707,901	4,277,590
Elgin, Joliet & Eastern[1]	1923	8,529	7,817	16,346	9.9	....	2,258	1,235	43.4	352	12.6	12,510	108	.....	.....
	1922	9,157	5,915	15,072	13.7	....	2,157	1,193	37.6	231	8.6	7,587	108	.....	.....
Long Island	1923	1,556	5,435	6,991	1.9	....	767	299	23.8	63	4.6	1,128	339	232,905	1,459,524
	1922	2,146	2,799	4,945	5.2	68	606	217	19.9	60	4.9	752	364	225,663	1,427,787
Pennsylvania System	1923	166,954	113,427	280,381	3.9	1,853	1,829	919	34.5	568	26.0	14,604	136	5,402,362	36,536,547
	1922	192,223	85,891	278,114	14.3	22,308	1,651	792	28.4	380	19.3	9,692	137	5,257,619	34,940,235
Philadelphia & Reading	1923	15,887	21,620	37,507	4.9	....	1,725	926	36.4	541	23.0	18,140	164	522,541	2,486,281
	1922	23,985	11,053	35,038	4.8	8,864	1,388	690	28.7	275	13.7	8,610	194	511,817	2,360,083
Pocahontas Region:														
Chesapeake & Ohio	1923	27,644	16,036	43,680	6.9	....	2,381	1,299	42.4	888	36.2	15,199	114	481,740	2,909,672
	1922	35,512	15,769	51,281	16.0	739	2,207	1,186	40.9	446	18.2	8,974	140	449,181	2,528,102
Norfolk & Western	1923	27,311	13,167	40,478	5.4	....	2,342	1,277	43.8	901	34.0	16,366	170	420,075	2,687,893
	1922	28,087	12,421	40,508	5.3	....	2,048	1,108	41.2	694	28.4	12,627	178	397,703	2,461,987
Southern Region:														
Atlantic Coast Line	1923	16,387	11,571	27,958	7.9	....	1,251	521	22.1	395	27.3	2,274	129	718,851	4,606,475
	1922	15,776	8,554	24,330	17.7	....	1,112	458	20.3	326	22.9	1,611	121	701,732	4,181,273
Central of Georgia	1923	2,933	7,221	10,154	4.6	....	1,036	443	23.0	480	30.3	2,558	171	339,313	1,742,469
	1922	3,275	5,208	8,483	13.9	....	1,021	445	21.3	453	28.2	2,014	165	335,567	1,700,167
I. C. (inc. Y. & M. V.)	1923	35,540	30,624	66,164	7.0	1,802	1,705	763	28.1	696	39.3	7,444	131	1,524,025	8,908,881
	1922	37,112	27,527	64,639	11.3	3,943	1,635	728	27.3	655	37.5	6,897	129	1,450,975	8,261,121
Louisville & Nashville	1923	33,385	21,905	55,290	16.0	64	1,195	577	31.7	572	29.5	6,286	164	1,059,581	6,299,871
	1922	31,162	21,471	62,633	12.3	71	1,047	495	27.7	414	22.4	4,338	182	1,017,778	5,889,950
Seaboard Air Line	1923	9,146	8,652	17,798	21.6	....	1,171	497	22.2	395	25.4	1,981	156	559,681	3,215,848
	1922	12,141	10,464	22,605	34.1	....	1,082	446	20.5	251	17.0	1,602	167	481,587	2,711,855
Southern Ry.	1923	29,752	29,607	59,359	4.8	....	1,180	514	23.0	425	26.7	3,636	185	1,344,866	8,255,405
	1922	33,186	28,141	61,327	13.3	....	1,065	459	20.8	297	18.9	2,620	198	1,319,584	7,626,898
Northwestern Region:														
Chic. & Northwestern	1923	43,755	32,117	75,872	7.3	....	1,340	581	25.7	402	25.6	3,605	144	1,648,993	10,764,204
	1922	43,734	26,268	70,002	9.3	2,100	1,204	486	20.8	281	19.2	2,334	147	1,546,210	10,201,241
Chic., Milw. & St. P.	1923	50,044	33,079	83,123	8.5	....	1,459	637	25.0	432	27.5	3,263	137	1,528,059	9,679,228
	1922	50,249	23,816	74,065	17.6	....	1,369	604	23.4	394	24.7	2,647	129	1,481,482	9,400,444
Chic., St. P., M. & O.	1923	3,222	8,916	12,138	12.3	576	1,059	422	21.6	346	24.7	2,430	149	310,232	1,867,561
	1922	3,565	9,503	13,068	14.5	135	1,080	454	24.8	393	23.0	2,972	137	303,919	1,849,105
Great Northern	1922	48,672	9,831	58,503	7.7	....	1,919	942	31.0	457	24.2	3,241	122	1,024,736	6,876,070
	1922	45,274	9,499	54,773	12.9	....	1,696	848	29.9	370	19.0	2,450	122	969,800	6,841,078
M., St. P. & S. Ste. M.	1923	18,672	8,334	27,006	8.9	2,317	1,230	579	24.8	373	21.7	2,302	109	475,216	3,026,677
	1922	18,619	6,723	25,342	7.9	3,715	1,144	527	23.0	341	20.4	1,987	112	446,949	2,773,723
Northern Pacific	1923	31,727	11,851	43,578	8.8	3,442	1,581	679	25.4	421	26.0	2,858	122	904,035	7,025,213
	1922	33,581	9,665	43,246	13.8	428	1,406	658	24.5	412	22.0	2,792	115	854,603	6,903,874
Ore.-Wash. R.R. & Nav. Co.	1923	6,117	6,316	12,433	4.0	....	1,367	592	25.2	307	19.2	1,783	199	262,397	1,872,739
	1922	6,586	2,303	8,889	2.6	1,219	1,331	630	26.2	472	24.9	1,958	188	262,825	1,860,735
Central Western Region:														
Atch., Top. & S. Fe	1923	49,970	20,868	70,838	7.5	11,886	1,611	613	21.5	466	32.4	3,338	134	1,774,081	14,116,739
	1922	48,501	14,635	63,136	8.6	7,555	1,528	602	21.5	491	32.8	3,161	131	1,672,955	13,285,553
Chic., & Alton	1923	7,857	6,946	14,803	8.6	....	1,426	621	25.8	435	26.4	6,375	124	289,953	1,747,211
	1922	[2]	[2]	[2]	[2]	1,200	1,225	563	24.3	([2])	([2])	3,434	181	282,115	1,639,929
Chic., Burl. & Quincy	1923	47,889	23,725	71,614	6.3	4,133	1,589	723	27.3	504	29.6	3,862	155	1,632,423	11,574,281
	1922	46,887	21,948	68,835	11.9	7,960	1,432	647	24.6	417	24.7	3,079	146	1,549,258	10,957,783
Chic., Rock I. & Pacific	1923	30,604	26,627	57,231	10.2	7,602	1,243	504	23.1	423	29.2	3,174	157	1,308,377	8,148,989
	1922	31,759	14,355	46,114	14.2	3,867	1,177	495	21.5	483	31.0	2,907	145	1,310,281	7,833,462
Denver & R. G. Wn.	1923	11,782	3,777	15,559	7.9	1,779	1,235	605	29.5	308	15.5	1,851	228	293,272	2,377,430
	1922	12,453	3,521	15,974	11.1	2,826	1,328	657	30.1	302	14.8	1,859	183	280,783	2,090,015
Oregon Short Line	1923	7,518	3,859	11,377	7.7	....	1,368	585	26.2	565	35.6	2,714	136	325,017	2,658,652
	1922	6,589	2,647	9,236	5.3	414	1,263	582	26.0	627	34.3	2,456	135	319,744	2,460,514
Southern Pacific	1923	19,967	30,435	50,402	3.4	....	1,703	644	23.1	617	42.8	4,483	138	1,532,652	12,854,074
	1922	23,420	20,787	44,207	7.2	990	1,635	637	22.0	537	36.2	3,428	143	1,392,875	11,940,304
Union Pacific	1923	18,710	15,149	33,859	8.2	....	1,800	606	20.0	657	54.7	5,944	135	931,753	8,334,262
	1922	17,083	7,519	24,602	12.9	3,706	1,721	664	20.5	688	48.1	4,568	125	914,923	7,934,912
Southwestern Region:														
Gulf, Colo. & S. Fe	1923	5,594	4,905	10,499	5.5	800	1,550	698	27.1	606	35.1	3,352	120	196,126	1,194,192
	1922	6,607	3,602	10,209	5.4	481	1,458	673	24.9	427	24.0	2,303	131	197,898	1,152,357
Missouri-Kans.-Texas	1923	8,403	7,504	15,907	7.4	2,786	1,734	659	21.5	385	29.8	3,270	122	277,691	1,887,228
	1922	8,847	8,012	16,859	6.8	3,856	1,472	604	22.2	275	18.9	2,331	132	259,811	1,863,284
Mo.-Kans.-Tex. of Texas	1923	326	8,736	9,062	14.4	967	1,283	536	24.4	343	22.3	2,240	139	254,788	1,566,877
	1922	261	10,285	10,546	7.2	1,730	1,042	439	22.5	210	13.4	1,277	154	212,821	1,362,624
Missouri Pacific	1923	23,855	25,758	49,613	9.2	....	1,373	619	25.9	468	27.2	3,264	147	1,049,205	6,031,928
	1922	28,413	21,111	49,524	10.9	3,167	1,342	626	24.3	373	20.3	2,526	145	929,255	5,418,954
St. Louis-San Francisco	1923	19,903	14,788	34,691	7.2	1,610	1,103	481	25.0	392	23.9	2,904	169	761,968	4,504,096
	1922	20,759	16,321	37,080	9.7	....	999	448	25.0	310	18.0	2,457	184	741,653	4,135,151
Southern Pacific Lines (in Texas and Louisiana)[2]	1923	6,265	13,720	19,985	6.0	400	1,284	554	26.1	542	32.3	2,920	120	552,831	3,755,145
	1922	6,938	11,862	18,800	7.9	876	1,185	523	25.4	491	29.3	2,504	126	547,457	3,504,503
Texas & Pacific	1923	3,849	6,068	9,917	10.5	....	1,306	554	22.9	441	27.9	2,242	133	288,298	1,862,295
	1922	5,496	5,527	11,023	19.4	....	1,305	528	20.9	308	20.9	1,739	142	295,517	1,822,291

Clerks Consider Suit Against P. R. R.

The Brotherhood of Railway and Steamship Clerks purposes, according to reports from Cincinnati, to bring suit against the Pennsylvania Railroad for damages in a sum based on the difference in wages received by Pennsylvania clerks as compared with rates prescribed by the Railroad Labor Board, which rates the Pennsylvania did not put into effect because of its contention that its "company union" rather than the brotherhood represented the clerical employees on its lines. It is said that the brotherhood will also claim damages to its organization on the ground that the Pennsylvania is destroying its prestige and standing.

The Hudson Automatic Train Stop

This is the name of an apparatus, fixed on a locomotive of the Richmond, Fredericksburg & Potomac Railroad, which was exhibited to a number of railroad men at Potomac Yard, Va., about five miles from Washington, D. C., on Friday of last week. It was also examined by three members of the Interstate Commerce Commission, Messrs. Esch, Lewis and McManamy. This is an intermittent contact device, the ramp being fixed close to the running rail. The contactor on the locomotive is a wheel 20 in. in diameter and 8 in. wide. This wheel rides upon the running rail constantly and when it reaches a ramp, is lifted and rides on the ramp. Connected with this wheel is a scraping contact or shoe which, normally 4 in. above the running rail, is pressed downward when it comes to the ramp and thus insures a clean surface for electrical contact. The ramps, of angle iron, are 30 ft. long and stand 1⅞ in. from, and 1¼ in. higher than, the running rail. The ramp is fastened to the running rail by hardwood brackets held with iron bolts.

R. F. Hudson, 500 Hibbs Building, Washington, D. C., is vice-president of the company.

The Atlantic City Pageant

At the Atlantic City annual parade and carnival this year, the Pennsylvania Railroad seems to have taken high honors, a local paper going so far as to characterize its exhibit in the rolling chair parade as by far the most elaborate and extensive that has appeared in the history of the institution. The railroad company had several striking floats in the pageant, and there was a glee club and several bands made up of employees of the road. The Long Island Railroad band led the entire parade. A dozen or more prominent officers of the Pennsylvania were in Atlantic City throughout the carnival with their business cars.

Prior to the show, and beginning back in February, the railroad had advertised Atlantic City constantly, distributing over two million handbills. A brief paragraph was printed in nearly two million timetables and other documents circulated all over the Pennsylvania system.

In recognition of these varied services, the local committee conferred on the Pennsylvania the unique honor of naming it the official route to be used by the women entering the beauty contest. And, if we may believe the press agent, the porters on the parlor cars provided special pink teas for the beauties!

"Safety First" Must Include the Family

The industrial accident problem in America, which is now causing 20,000 deaths and 500,000 injuries annually, will never be fully controlled until the public accident problem is controlled. This was the declaration of C. W. Price, vice-president of the Elliott Service Company, New York, before the American Society of Safety Engineers at New York on September 21. The United States Steel Corporation and other concerns are now giving the workmen in their plants instruction in the prevention of accidents on the street, in the home, and in other public places. It is easier to get workmen seriously interested in accident prevention at home and on the streets than in the plant, because in the former case the lives of their wives and children are concerned.

In the city of St. Louis, for example, said Mr. Price, 110 industrial workmen were killed by accidents during 1917 and only 15 in 1922. How is this remarkable record to be accounted for? . . . It was due in part to the intensive safety educational work done in the individual plants; but in a much larger part by the community-wide public safety campaign. . . . Can safety be organized in a community as it has been organized in the great industries? Until very recently we could not truthfully say that such a thing was possible. But experience in public safety campaigns in New York City, Washington, Baltimore, Pittsburgh, and Louisville shows that it is now possible for any community to organize the work of accident prevention on as scientific and as effective a basis as it is organized in the modern industrial plant or railroad.

Safety at Long Island Crossings

The Long Island Railroad, afflicted with a larger share of level crossing troubles than, perhaps, any other railroad in the world, proposes to teach safety by example as well as by precept; and has prepared a pledge which is being presented to every one of its nine thousand officers and employees, with an appeal for signatures. The pledge reads, in part:

"Whereas, The American Railway Association, the National Highway Traffic Association and the progressive civic bodies of the country generally are backing the movement to lessen the number of deaths and injuries at railroad highway grade crossings; and . . . Whereas, There are 251,500 such grade crossings on Class I railroads alone, the elimination of which would take hundreds of years and billions of dollars; be it, therefore,

"Resolved, That as good citizens and as employees of the Long Island Railroad, we pledge ourselves to use all reasonable care when driving motor or horse-drawn vehicles over railroad tracks at grade crossings; that where the view is obstructed, from any cause, we will come to a full stop and make sure it is safe to cross before proceeding; that when riding in a motor vehicle driven by another, we will use our influence upon the driver to cause such car to be driven carefully and, where necessary, stopped, as above; and that before employing any individual with a motor vehicle to transport us or members of our families, either by bus, stage, taxi or other motor vehicle, we request this care; that where the law or the State Public Service Commission orders require that such vehicles come to a stop before crossing railroads at grade, we will patronize only those who comply with such law or Public Service order, and come to a full stop. . . .

The Railroad Labor Board

Threats to use its power under the Transportation Act to compel the appearance of railway officers in cases before the Labor Board have been made in two instances during the past week. In the first case officers of the Illinois Terminal disregarded a call for a hearing before the Board on 18 docketed cases involving train and engine service brotherhoods. The officers of the road were given until September 27 to appear voluntarily, after which court action will be resorted to if necessary. In the second instance W. L. Ross, senior vice-president of the Toledo, St. Louis & Western, was requested to appear before the Board on October 5 after representatives of the road had failed to appear at a hearing on September 25. In this case the Brotherhood of Railway and Steamship clerks is petitioning for an order requiring the management to confer with representatives of the employees in regard to new working agreements.

Two decisions have been rendered by the Labor Board ordering that elections be held on the Southern Pacific Lines in Texas and Louisiana, and on the Nashville, Chattanooga & St. Louis, to determine whether the Brotherhood of Railway and Steamship Clerks or the "company organizations" of clerical employees on the two lines shall represent the clerks in future negotiations.

The telegraphers on the Virginian Railway have applied to the Labor Board for the restoration of wage rates that existed under decision No. 2 for train dispatchers and tower and telegraph employees.

The train dispatchers of the Chicago & North Western have applied to the board for wage advances establishing the rates of $325 monthly for assistant chief dispatchers and $300 for trick dispatchers.

The Railroad Labor Board in a decision published on September 19 ordered that clerical employees on the Erie be reimbursed to the amount of a reduction in wages that went into effect on January 25, 1921, which the board held was in violation of decision No. 2 of the Labor Board and of the Transportation Act.

Traffic News

G. L. Anderson has been appointed traffic manager of the Longview, Portland & Northern, with headquarters at Longview, Wash.

The Consolidated Ticket Office in Pittsburgh, Pa., has been abandoned. The new offices of the roads are all close to each other in the same building.

The Massachusetts Department of Public Utilities has suspended for one month from October 15, the tariffs filed by the principal railways of the state announcing increases in the rates for commutation tickets.

The Traffic Club of New York met at the Waldorf-Astoria Hotel on Tuesday of this week. The principal discussion was on freight car pooling with a paper by N. D. Ballantine, vice-president of the National Railway Service Corporation, a subsidiary of the National Association of Owners of Railroad Securities. Mr. Ballantine made a plea for the passage of a federal law to bring about "the joint use of railroad facilities."

The Chicago Shippers' Conference Association, which was organized by industrial traffic men representing industries and associations in Chicago and its suburbs for the purpose of studying transportation problems of general interest to the Chicago markets will hold its annual meeting at the Hotel LaSalle, Chicago, on November 7. R. C. Ross, general traffic manager of Joseph T. Ryerson & Company, is president of the association.

The freight soliciting agents, including off-line agents of the Atlantic Coast Line, a party numbering about 90 men, have made a trip throughout the company's principal lines from Virginia to Florida, visiting prominent shippers and cultivating, as far as practicable the acquaintance of all patrons of the road. This business excursion was under the direction of C. McD. Davis, assistant freight traffic manager.

The Illinois Central and the Gulf Coast Lines have established a merchandise package car service between Chicago and Mexico City. Mixed merchandise is consolidated into carload shipments and consigned to a forwarding agent who acts for the National Railways of Mexico, in dealing with the Mexican custom house. These cars are routed over the Illinois Central, the Gulf Coast Lines and the Texas-Mexican to Laredo, and then over the National Railways to Mexico City.

Representatives of the state regulatory boards of Colorado, Wyoming, Utah, Idaho, and Nebraska, conferred with members of the Central Regional Advisory Board of the American Railway Association, at Denver, Colo., during the week of September 17. It was decided to appoint a committee to prevent overshipment of grapes to New York. At the time of the meeting there were over 600 carloads of grapes in New York for which there was no ready market, while 600 additional cars were en route to New York from California.

The Union Pacific's Public Relations Department

Since the inauguration of public relations work on the Union Pacific representatives of the road have addressed chambers of commerce, Kiwanians, Rotarians, Chautauquas and similar organizations, on 46 occasions in the states of Nebraska, Kansas and Colorado. One lecture was broadcasted from the Omaha Grain Exchange radio station. Attention is called to the fact that the railroads of the United States have not fallen down, as is sometimes claimed, but are handling a record volume of business safely, promptly and economically. Freight rates have not advanced relatively as much as the prices of most of the basic farm products. To make drastic reductions now without a workable plan for reducing the cost of operation can have no other effect than to bankrupt many of the railroads.

Railroad officers, who can save millions of dollars to stockholders through judicious purchasing of supplies and putting into effect economical and efficient methods, are worth millions of dollars to their companies while their salaries are so small when compared to the gross revenues, that if all of them worked for nothing, freight rates could not be reduced as much as one-half of one per cent. If railroads do not earn the 5¾ per cent contemplated by the Transportation Act, they do not get it. The frequent statement that railways receive a guarantee is made ignorantly or maliciously. The lectures include a great volume of information. It is shown that the railroads as a whole are not overcapitalized and are not owned by a few persons. The men of influence who are challenging the integrity or the efficiency of the Interstate Commerce Commission, are men who fathered the Valuation Act and who advocate government ownership of railroads.

As a corollary to the speeches, a statement dealing with the railway situation is published each month as an advertisement in newspapers along the Union Pacific lines. Some of the titles are: Union Pacific to Spend $43,000,000 in 1923 Improvements; Railroad Earnings Are Not Guaranteed; Union Pacific Taxes $36,306 a Day; At Grade Crossings He Who Hesitates is Safe. On the last Friday of each month the current advertisement is broadcasted from the Omaha Grain Exchange.

Opening of the Longview, Portland & Northern

The Longview, Portland & Northern Railroad has been opened for business between Longview Junction, Wash., and Longview and the construction of the remainder of the line is being pushed as rapidly as possible. When completed this railroad will be approximately 30 miles in length, leaving the junction with the joint line of the Northern Pacific at Longview Junction, Wash., near Kelso, and extending through the new city of Longview, north along the Cowlitz river through Castle Rock, Alequa and Vader and terminating at Ryderwood, where another new town is being built. The new road and towns are being constructed by the Long Bell Lumber Company of Kansas City, Mo., for the development of a timber and agricultural section. North of Longview, the construction work is proceeding favorably and the section between Vader, on the Northern Pacific, and Ryderwood, will be placed in operation shortly.

Wide World

Daniel Willard (right), President of the Baltimore & Ohio, Leaving the White House After Calling on the President

Commission and Court News

Personnel of Commissions

S. J. Burris, Jr., has been appointed railroad and hydraulic engineer for the Colorado Utilities Commission, to succeed C. D. Vail, resigned.

Frank Oliver of Edmonton, Alta., has been appointed to the Board of Railway Commissioners of Canada, succeeding the late Dr. J. G. Rutherford.

State Commissions

The Missouri Public Service Commission has decided to file an intervening petition with the Interstate Commerce Commission in opposition to the consolidation of the Denver & Rio Grande Western with the Atchison, Topeka & Santa Fe. This action follows a similar move by the city of St. Louis.

By a new law just adopted in the State of Alabama, and signed by the governor on September 13, the Public Service Commission of the state has authority to require a railroad to build a new station when convinced that an existing station is not adequate. The law was passed following a court decision in which an order for a new station was disallowed because the old station could be remodeled.

The Michigan Public Utilities Commission has held in a recent decision that it is without power to refuse to permit motor bus companies to operate parallel to standard or interurban railroads even though the railroads are furnishing all of the service necessary. The railroads and interurban lines are expected to take the matter to the state Supreme Court. When the "Motor Bus Law," passed by the 1923 Legislature, giving the utilities commission power to regulate the routes of busses, went into effect, several railroads, including the Grand Trunk, as well as interurban lines protested the continuance of operation of busses parallel to their lines.

Court News

Arizona Stock Killing Law—Fencing

The Arizona Supreme Court holds that, as the state statute, Civ. Code 1913, par. 3779, does not, like the Missouri fencing statute, impose on railroads the duty to fence their lines, the duty of the railroad is merely to refrain, in the absence of a sufficient fence, at such places as the law permits a fence to be erected, from killing live stock on the track.—Payne v. Clifford (Ariz.) 211 Pac. 566.

Commission Order for Train to Stop Set Aside

The Missouri Supreme Court holds that an order of the state Public Service Commission requiring St. Louis-San Francisco interstate train to stop at Neosho was an unlawful interference with interstate commerce, and not justified by the local demands. The fact that the government saw fit to stop the train there during war time was not allowed to affect the case.—State v. Commission (Mo.) 249 S. W. 65.

Authority of I. C. C. to Compel Interstate Railroads to Establish Union Stations

The California Supreme Court holds that, by various sections of the Interstate Commerce Act, as amended and added to by the Transportation Act, investing the Commission with powers over changes in lines, tracks, etc., of railroads engaged largely in interstate commerce, the act gives authority over the matter of union terminal station facilities of railroads largely engaged in interstate commerce, to the Interstate Commerce Commission and divests the State Railroad Commission of power over the subject.—Atchison, T. & S. F. v. Railroad Commission (Cal.) 211 Pac. 460.

Damages for Change of Station Site

Where lands are conveyed to a railroad for right of way and station site in consideration of the establishment of a regular station and the station, after being established, is ordered by the state Railroad Commissioners removed to another point, the Florida Supreme Court holds that the party conveying the land has a right of action for the fair value thereof, but not for consequential damages, such as injury to business, resulting from the change of site.—Armstrong v. S. A. L. (Fla.) 95 So. 506.

Turntable Doctrine Not Applicable to Children Over Fourteen

In an action for injury to a boy 15 years of age, of normal growth and intelligence, who had his leg broken while playing with an unfastened turntable, the Alabama Supreme Court, failing to find a reported case in which the turntable doctrine has been applied to, or even invoked by, a child over 14, concludes that the doctrine does not apply to children over that age.—Central of Georgia v. Robins (Ala.) 95 So. 367, 370.

Railroad Exercising Eminent Domain to Cross Another Must Select Point of Crossing Judiciously

While a local railroad company may, under the Mississippi statutes, lawfully exercise the right of eminent domain to enforce a junction or connection or crossing of another railroad, the Supreme Court of that state holds that such power must be reasonably exercised with due regard to existing conditions, and a point of crossing must be selected with due regard for the interests of the two railroads and of the general public.—Alabama & Vicksburg v. Jackson & Eastern (Miss.) 95 So. 733.

Oklahoma Fencing Statute Construed

The Oklahoma Supreme Court holds that it is the duty of every person or corporation owning or operating a railroad in Oklahoma to build and maintain a lawful fence along the right of way except at public highways and station grounds, under sections 1435 and 1438 Revised Laws 1910; and where stock goes on the right of way and is injured on account of the failure of the company to maintain such lawful fence, it is liable for stock killed or injured by its trains, regardless of negligence in the management of its trains.—New v. Elliott (Okla.) 211 Pac. 1025.

Defective Coupler Must be Proximate Cause of Injury

In an action under the federal Safety Appliance Act for the death of a brakeman who was thrown to the track by coming in contact with a frog after making a coupling, the proof showed only that the coupler was defective and that the brakeman pulled the pin, and was injured. The Montana Supreme Court holds this evidence insufficient to establish an essential element of the plaintiff's case, viz., that the defective coupler was the proximate cause of the brakeman's injury.—Kern v. Payne (Mont.) 211 Pac. 707.

Income Tax—Expenditures on Betterment of Leased Properties Deductible as Additional Rentals

Section 12a of the Federal Income Tax Act of 1916 authorizes the deduction from gross income of a corporation of "all the ordinary and necessary expenses paid within the year in the maintenance and operation of its business and properties, including rentals or other payments required to be made as a condition to the continued use or possession of property to which the corporation has not taken or is not taking title." The Central of New Jersey operates various railroads under lease, and during 1916 made additions and betterments necessary to keep the properties in good order, as required by the leases. The Circuit Court of Appeals, Third Circuit, holds that money so expended within the year is money paid as additional rentals, and is, under the act, deductible from the gross income of that year, and is not, as the government contended, to be prorated according to the number of years of the lease, with an aliquot part only annually deducted.—Central of New Jersey v. Duffy, 289 Fed. 354.

Position of Car Step Above Platform Held No Basis of Claim of Negligence

The Alabama Supreme Court holds that the fact that a car step is 5 or 6 inches above the platform, or that the vestibule door is allowed to protrude 5 or 6 inches over the passageway up the steps, is no basis for a claim of negligence by a female passenger whose dress has caught on something, presumably the latch which holds the platform in place when the door is closed, while she is boarding a train. And there was no negligence in the failure of the trainman to help her after her dress had caught, where her husband was immediately behind her and rendered her assistance. —Southern v. Hayne (Ala.) 95 So. 879.

Consignee's Liability for Demurrage

Where there is a dispute between the carrier and the consignee of a car of goods as to the freight due, and the company offers to deliver on payment of the amount admitted by the consignee, the Mississippi Supreme Court holds that the consignee, to relieve himself of liability for delay in receiving and unloading the car, must pay the freight in accordance with the company's offer, and a tender by him to the company, conditioned on a promise by it not to attempt thereafter to collect from him any additional sum will not relieve him from demurrage should the company decline to make the promise and he, for that reason, declines to receive and unload the car.—Lexington Compress & Oil Mill Co. v. Yazoo & M. V. (Miss.) 95 So. 92.

Rule as to Cots for Invalid Passengers— Invalids Accompanied by Relatives

The Kentucky Court of Appeals holds that a rule requiring an invalid passenger to be carried on a cot, instead of on a bed spring, is reasonable, and the railroad may properly require such a passenger to be removed from the train if a cot is not procured for her. The court also affirms the modification recognized by the Kentucky courts of the rule as to care for invalid passengers, viz., that if such passenger be accompanied by male friends or relatives capable of rendering the necessary assistance, the train man is under no duty to render such assistance unless requested to do so.—Arnett v. C. & O. (Ky.) 248 S. W. 1040.

Railroad's Election Not to Adopt Workmen's Compensation Act Not Annulled by Federal Control

The Kansas Supreme Court holds that where a railroad company had elected not to come within the operation of the Workmen's Compensation Act prior to the taking over of the railroad by the government during the war period, such election was not annulled by the taking of federal control, and, when the possession of the railroad was restored to the company at the end of the war, the relations between the state and the railroad company remained the same as before the taking, and another election was not necessary to take the company out of the operation of the Workmen's Compensation Act.—McMarland v. Atchison, T. & S. F. (Kan.) 211 Pac. 635.

Apparent Authority of Agent to Pay Freight Damages

A shipment of potatoes f. o. b. point of destination gave consignee the right to inspect before acceptance. Inspection was made by consignee and the railroad's agent, and the shipment was declined. The agent orally agreed with consignee that if the latter would take the shipment and dispose of it to the best advantage the company would pay him for any damage. This agent was in the habit of settling claims for lost and damaged freight. The Mississippi Supreme Court held the company liable for the damages. A secret limitation that the agent's authority extended only to settling claims not exceeding $100 was held not binding on the consignee, who did not know of it. N. O. & N. E. v. Interstate Wholesale Grocers (Miss.) 95 So. 316.

Extent of Railroad's Liability to Insurance Company

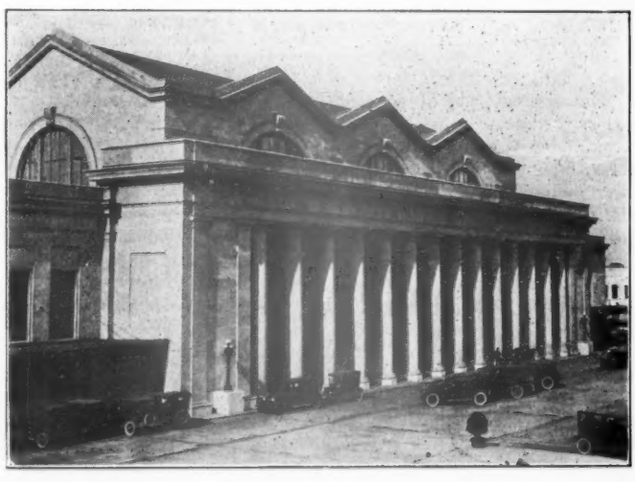
In an action by an insurance company against a railroad to recover a loss paid, under an employers' liability insurance policy, to an employe of a construction company injured by a locomotive of the railroad while he was engaged on the construction of a roundhouse, the Louisiana Supreme Court holds that, under the state statute giving an insurer a right of recovery against a third person responsible for the injury, the insurance company had no right of action against the railroad except for reimbursement of the amount it had actually paid the injured employee, and its right to recover to that extent would depend upon whether the injured employee could have recovered damages from the railroad if he had sued that company.—London Guarantee & Acc. Ins. Co. v. V., S. & P. (La.) 95 So. 771.

Remote Damages from Telegram Erroneously Notifying Unclaimed Shipment

The Mississippi Supreme Court holds that a railroad company, negligently sending a shipper of potatoes a telegram, falsely stating that the goods were unclaimed, was liable only for such damages as would naturally flow from the negligent act. Conceding that this necessitated a trip by the shipper from Purvis, Miss., to New Orleans, and that such trip made it impossible for him to countermand orders for the loading of other cars, which were accordingly sold at a loss, because of a slump in the market, such loss was not efficiently or proximately caused by the telegram, and was too remote to be recoverable for mere negligence in sending the telegram. The only damages recoverable were held to be expenses paid on the trip and for loss of time.—New Orleans & N. E. v. Mathews (Miss.) 95 So. 133.

No Duty to Awaken Passenger in Chair Car

In an action against the receiver of the Mississippi, Oklahoma & Gulf for damages because of the failure of a conductor to awaken plaintiff, a passenger on a ticket from Hitchita to Oklahoma City, in time to board a train of the Ft. Smith & Western at Dustin, the Oklahoma Supreme Court holds that it was the plaintiff's duty to inform himself as to whether or not a change of trains would be necessary, and if he made a mistake, not induced by the railroad, against which ordinary care would have protected him, he had no remedy against the railroad for the consequences. He did nothing to ascertain whether a change of trains was necessary, and paid no attention to his ticket, which was notice to him that a change at Dustin was necessary. There is no duty on the part of a railroad company to awaken a passenger who has fallen asleep in a chair car, to advise him that his destination has been reached.—Hill v. New (Okla.) 212 Pac. 422.



Kadel & Herbert

Passenger Terminal at Jacksonville, Fla.

Foreign Railway News

Railroad Construction in Czechoslovakia

Railroad construction in Czechoslovakia is receiving quite an impetus, according to Consul C. S. Winans at Prague. Construction on a line from Munkacevo to Uzhorod, in the Ruthenian region, was scheduled to begin in August, 1923. The road is expected to have a unifying effect politically and its building at this time is meant primarily to relieve unemployment in Ruthenia. Construction of the Beregszentmiklos-Lazne-Simjak line in Ruthenia was started June 1, 1923. This line is being built in connection with the exploitation of the Ruthenian forests.

The Bustehrad Railway—the last privately owned railway in Czechoslovakia—passed into the hands of the government July 15, 1923. All employees, 65 per cent of whom are of German birth, have been given until December 31, 1925, to learn the Bohemian language.

French Railways Show Operating Surplus

The review of French railroad operation for the past year and for the first months of the current year is particularly interesting, since it is in this period that the legislation for consolidating French railroads has definitely come into effect. The new convention was passed June 21, 1921, but became actually operative only with the expiration of that year, according to Commercial Attaché Chester Lloyd Jones at Paris.

The reports of the more important railroads of France for 1922 are now available and make it possible to compare results obtained under the new legislation with those in previous years. The two railway systems operated by the state—the Etat and the Alsace-Lorraine lines—will not publish their definite reports until a considerably later time.

The year 1922 brought a decided improvement in operating returns compared with 1921. All railroads showed a surplus, with the exception of the Etat system, which has regularly given poor financial returns, and of the Midi system, which, however, showed almost a balance account. In consequence, the operating deficits of the larger French railroads in 1912 and 1921 have now given place to a surplus of more than 400,000,000 francs (franc—6.2 cents at present exchange rate).

A summary of the results of the operation accounts appears in the following table:

FINANCIAL RESULTS OF FRENCH RAILROAD OPERATION, 1922

Railroad	Receipts. Francs	Expenses. Francs	Surplus (+) or deficit (—). Francs
Nord	1,158,600,000	1,050,700,000	+107,900,000
Est	1,037,300,000	848,100,000	+189,200,000
Paris-Lyon-Mediterranee (P. L. M.)	1,806,000,000	1,598,600,000	+207,400,000
Paris-Orleans (P. O.)	941,000,000	910,900,000	+30,100,000
Midi	442,900,000	458,700,000	—15,800,000
Etat	1,041,700,000	1,194,200,000	—152,500,000
Alsace-Lorraine	521,000,000	484,000,000	+37,000,000
Total	6,948,500,000	6,545,200,000	+403,300,000

The improvement during 1922 was the combined result of a 10 per cent increase in receipts (600,000,000 francs) over the previous year and a 9 per cent reduction in expenses (700,000,000 francs). The showing would have been even better had not the railroads been obliged to take over certain expenses heretofore borne by the public treasury. The chief of these expenses was the indemnity for increased cost of living, assumed by the railroads after January 1, 1922, which formerly had been repaid to them by the state. Furthermore, they have been obliged to set apart additional amounts for pensions, since the new pensions have to be reckoned on the present salary basis.

Favorable as the above showing is, it does not leave the French railroads in a strong financial position, for while the operating account has improved, the capital charges have grown. As a result, for the important companies the 1922 balance is on the wrong side, although it is much less unfavorable than in the years immediately preceding.

For the five great railroads under private operation, the charges on capital account in 1922 reached 1,198,300,000 francs, compared with 948,300,000 francs in 1921 and with 693,700,000 francs in 1913. The dividends on stocks remained the same in 1922 as in 1921, but the payments on bonds rose from 544,000,000 in 1913 to 810,000,000 in 1921 and to 1,067,000,000 in 1922.

The total capital account deficit for 1922 amounted to 1,147,000,000 compared with 2,060,000,000 in 1921 and with 2,914,000,000 in 1920.

It is not possible at the present time to make an estimate as to the degree to which the change for the better noted in 1922 has continued in the first half of 1923, nor is it possible to give a statement of the course of the capital account. It appears, however, that at least on the operating side a continued upward trend is in process, for the figures covering the period January 1-July 15 show higher returns from all the larger railroads with the exception of those in Alsace-Lorraine. The latter, because of special circumstances, show a deficit in the operations account.

OPERATION RECEIPTS OF FRENCH RAILROADS, FIRST HALF OF 1923

Railroads	Receipts, Jan. 1-July 15— 1922 Francs	1923 Francs	Surplus (+) or deficit (—). Francs
Nord	574,487,000	591,420,000	+16,933,000
Est	532,533,000	539,567,000	+7,034,000
Paris-Lyon-Mediterranee	918,270,000	999,590,000	+81,320,000
Paris-Orleans	466,507,000	495,984,000	+29,477,000
Midi	230,559,200	250,254,400	+19,695,200
Etat	505,052,000	538,355,000	+33,303,000
Alsace-Lorraine	240,592,000	231,659,000	—8,933,000
Total	3,468,000,200	3,646,829,400	+178,829,200

Taken as a whole, the railway receipts for the period mentioned in 1923 are approximately 170,000,000 francs in excess of those for the same period in 1922.

The Position of the Swiss Federal Railways

The operating results of the Swiss Federal Railways since the beginning of 1922 have been more favorable, on the whole, than in 1921. This improvement has been maintained in the first four months of 1923, during which a surplus of 14,000,000 francs was accumulated, as compared with a deficit of 7,000,000 francs for the corresponding period of 1921, according to Commerce Reports.

In spite of the gains made, the results of 1922 operations were not as favorable as was anticipated at the time the budget for the year was made. Surplus from operations amounted to 31,000,000 francs instead of the surplus of 78,000,000 estimated in the budget. The profit and loss account showed a deficit of 46,000,000, and the investment account increased by 104,000,000; the debt rose by 170,000,000 francs, making a total debt of 2,479,000,000 francs, less 120,000,000 held in securities and credits. Charges on the debt of the railroads have been uniformly higher since the war than the balance received from operations.

The high cost of living and the high exchange rates have cut off much of the tourist travel in Switzerland, especially from central Europe, on which the country largely depends. These conditions, combined with the general reduction in fares and special rates made on combination, general subscription, and long-trip tickets, have resulted in a decline in receipts from passenger traffic.

Earnings in 1922 were 3 per cent below those for 1921, in spite of a half-million increase in the number of passengers carried. The policy of lowering rates to stimulate travel will nevertheless be continued, and it is understood that further reductions are in preparation. An improvement in train schedules was also made on June 1 with this end in view. Passenger traffic for the first five months of 1923 shows an improvement over 1922, but falls 8 per cent below the record traffic carried in the corresponding period of 1913.

Freight traffic also increased in 1922 over 1921 from less than 12,000,000 to over 14,000,000 tons, the latter figure being approximately the same as in 1913. As in the case of passenger traffic, however, receipts declined slightly, partly as a result of the economic depression and partly because of the reduction in rates on coal shipped through Switzerland to Italy and on agricultural products.

Traffic in 1923 gives promise of more favorable results in both volume and receipts. During the first five months of 1923, 5,891,000 tons of merchandise were transported and receipts amounted to 85,574,000 francs, while the corresponding figures for 1913 are 5,963,000 tons and 47,954,000 francs, respectively. The high receipts in 1923, as compared with

the pre-war year, reflect an increase in average receipts from 8 francs per ton in 1913 to 17 francs in 1921, and to 15 francs in 1922.

Although operations thus far in 1923 indicate that the 78,000,000 francs surplus from operations estimated in the budget will be reached, this figure is substantially below the amount necessary to bring a balance of the general account, owing to the heavy burden of debt charges. Moreover, the maintenance of existing rates is not acceptable to the public, as they are felt to be burdensome to industry and discouraging to foreign traffic, both freight and passenger.

Among the measures suggested to lower operating expenses, and so to make possible a reduction in rates without a loss in income, are the reduction in maintenance charges, in traction costs, and in wage expenditures. There is no possibility of reducing capital charges until surpluses have accumulated to wipe out a part of this item. In fact, these seem destined to increase for a number of years while the electrification program is being carried out.

The chief cause of outlay in traction costs has always been the imported coal used for fuel. The total expense for this item in 1922 was 71,520,000 francs—nearly four times that in 1913, although nearly 10 per cent lower than in 1921, and over 24 per cent less than in 1920. All this, of course, represents so much capital exported and a correspondingly unfavorable trade balance. This high cost of coal has been largely responsible, therefore, for the demand for electrification of Swiss railways.

By the end of 1922 there were 412 kilometers of electrified lines, out of a total of 2,881 kilometers of road, and the Permanent Commission of the Federal Railroads has proposed to push the electrification program more rapidly through the granting of government credits. The matter will come up for discussion in September, 1923.

Even though electric operation of trains is eventually demonstrated to be cheaper in Switzerland than steam power from coal [the question has not, apparently, been yet conclusively proved], the initial effect of carrying on electrification now will be, as stated, to increase the debt charge, already a very heavy burden. The incidental relief of unemployment may or may not offset, in the eyes of the Swiss people, the extra costs incident to pushing construction during the present period of high prices.

The other large expense item is wages. There is a sharp division of opinion on the possibility of reduction in the railroad wage account. Labor cost of railroad operation has more than doubled since 1913; but as long as general living costs are still high, and as long as the recent labor legislation remains unmodified, there is little prospect of a substantial reduction in the wage bill or of lengthening working hours and reducing vacations—at least without strong opposition.

Some advance in cutting down the wage expenditure is promised through the reorganizing of railroad service, passed by referendum vote on May 7. This provides for reducing the number of higher employees (personnel of administrative council, general directors, arrondissement directors, etc.) and abolishes many lesser positions, thus effecting a saving of several million francs.

THE UNION PACIFIC, in its campaign to give to the public facts concerning railroads has inserted three advertisements in local newspapers along its lines. The first of these advertisements to be published was entitled "Union Pacific Spends $42,000,000 for 1923 Improvements." This article included a list of improvements for 1923 showing their approximate cost and described new cars and locomotives that will be available for this year's traffic. The second, entitled "Who Owns the Union Pacific," stated that 51,016 stockholders owned this railroad, of which 43 per cent are women. The stockholders outnumber the yearly average number of officers and employees of the system by 4,461 and no person, firm, corporation or institution owns as much as two per cent of the capital stock. The average holding is 63 shares of a par value of $6,300. Stockholders are found in every state of the union and in Alaska, the Canal zone, Guam, Hawaii, Philippine Islands and Porto Rico. The third, "Railroad Earnings Are Not Guaranteed," is designed to correct the impression that railroad earnings are in some way guaranteed by the government, by quoting the Transportation Act and showing the percentage actually earned by railroads since 1920.

Equipment and Supplies

Locomotives

THE TEMISKAMING & NORTHERN ONTARIO is inquiring for 4 Mikado type locomotives.

THE SOUTH AUSTRALIAN RAILWAYS are inquiring through the locomotive builders for prices on 20 locomotives.

THE NADAWAH LUMBER COMPANY, Nadawah, Ala., has ordered 1 Mogul type locomotive from the Baldwin Locomotive Works.

THE LONG BELL LUMBER COMPANY, Longview, Wash., has ordered 2, 2-6-6-2 Mallet type locomotives and 1, 0-6-0 switching locomotive from the Baldwin Locomotive Works.

Freight Cars

THE SPOKANE, PORTLAND & SEATTLE is inquiring for 50 cars.

THE LEHIGH & NEW ENGLAND is inquiring for from 6 to 8 caboose cars.

THE CHESWICK & HARMER is inquiring for 10 steel hopper cars of 50 tons' capacity.

THE AMERICAN SHORT LINE RAILROAD ASSOCIATION is inquiring for 500 automobile cars.

THE SOUTH AUSTRALIAN RAILWAYS are inquiring through the car builders for 600 freight cars.

E. L. DOUGHERTY & Co. has ordered 100, 40-ton, 8,000 gal. capacity and 100, 50-ton, 10,000 gal. capacity tank cars, from the General American Tank Car Corporation.

THE BALTIMORE & OHIO was incorrectly reported in the *Railway Age* of September 1 as asking for prices on the repair of 200 coke cars. The railroad does not contemplate having these repairs made.

Passenger Cars

THE ST. LOUIS SOUTHWESTERN has ordered 5 steel underframes for baggage cars from the Commonwealth Steel Company.

Iron and Steel

THE NEW YORK CENTRAL is inquiring for 400 tons of structural steel for bridges.

THE ILLINOIS CENTRAL has ordered 300 tons of reinforcing bars for use at New Orleans, La., from the Kalman Steel Company.

THE CHICAGO, BURLINGTON & QUINCY has ordered 900 tons of reinforcing bars for use at Chicago, from the Blome-Sinek Company, Chicago.

Machinery and Tools

THE SOUTHERN PACIFIC has placed an order for 2 axle lathes.

THE NEW YORK CENTRAL has placed an order for a 30-ton gantry crane.

THE CHICAGO, BURLINGTON & QUINCY has ordered one 20-ton overhead electric traveling crane for its shops at West Burlington, Ia., from the Shaw Crane Company.

Signaling

THE SOUTHERN PACIFIC, Texas lines, will install automatic signals at stations on the Galveston, Harrisburg & San Antonio as follows: Uvalde, Noonan, Sabinal, Alpine, Tronto, Paisano and Marfa. The work will require 45 Union lower quadrant, Style B semaphores.

Supply Trade News

The McMyler Interstate Company, Cleveland, Ohio, has removed its New York City office from 50 Church street to the Woolworth building, 233 Broadway.

The property of the **Kilbourne & Jacobs Manufacturing Company,** Columbus, Ohio, has been sold at public auction to R. Huntington, of the Huntington National Bank, Columbus, Ohio.

Albert S. Boisfontaine, assistant to the manager of the **Southern Pine Association,** New Orleans, La., since last June, has been appointed assistant secretary. Mr. Boisfontaine has been serving in a number of capacities with the association since 1917.

The Linde Air Products Company, New York, recently started continuous operations in its new oxygen producing plant, Savannah, Ga. **S. P. Wilson, Jr.,** is operating superintendent. An additional warehouse has also been opened at Charlotte, N. C.

The main office in Tokio, Japan, of **Roku-Roku Shoten** having been destroyed, requests are made to manufacturers in the United States to send to the company's branch office at Osaka, street address Enokojima Nishiku, complete catalogs and prices to replace their files. S. Noda is president of the company.

Frederick V. Green, has been appointed assistant to the president of the **Pittsburgh Testing Laboratory** with headquarters at 50 Church street, New York. Mr. Green was born in New York City and received his education at Nyack, N. Y. After some experience in the lumber business with his father, he organized in 1895 the Empire Engine & Motor Company and was its treasurer until he joined the Westinghouse Air-brake Company in 1902. He was assistant general sales manager in the New York territory for the Westinghouse Air-brake Company until 1919, when he was appointed manager at Johannesburg, South Africa, for the Baldwin Locomotive Works, returning to this country to enter the service of the Pittsburgh Testing Laboratory.

Pullman Company Issues Annual Report

The surplus of the Pullman Company for the fiscal year ending July 31, 1923, was $23,787,633. The gross revenue from cars operated amounted to $76,906,665. The items of cash, government bonds and certificates of indebtedness held in the treasury of the operating department amounted to $35,230,935 and government bonds and cash in the treasury of the manufacturing department amounted to $6,547,366, making a total of $41,778,302. Other bonds, stocks and car trust notes amounted to $17,000,000.

During the year, 33,255,577 revenue passengers were carried in Pullman cars, traveling an average distance of 375 miles. The volume of travel necessitated the operation of a daily average of 5,864 cars a total distance of 852,800,000 car miles, or 400 miles per car per day.

The net operating income of $7,919,891 is equivalent to 24 cents for each revenue passenger, or $2.84 per day per each car owned by the company and represents a return of five per cent of the value of the properties used in operation. A reserve of $3,000,000 was established to care for the deferred maintenance that accumulated during the shopmen's strike, which was in effect during the early months of the fiscal year just closed.

At the close of the year this company owned 7,765 cars, of which 191 were added during the year.

The income account and balance sheet for the fiscal year ending July 31, 1923, are as follows:

INCOME ACCOUNT

	Year Ending July 31, 1923	Year Ending July 31, 1922
Gross revenue from cars	$76,906,665	$62,548,406
Operating expenses, repairs of cars, taxes, etc.	60,553,535	62,221,270
	$16,353,130	$327,136
Less: Proportion of revenue accruing to railroad companies under operating agreements	$8,533,239	
Net operating income for the year	$7,919,891	327,136
Returns for manufacturing, interest, etc.	5,967,678	3,944,631
Total net income for the year	$13,887,569	$4,271,767
Addition to reserve for depreciation, to complete provision for depreciation on cars in service prior to 1910	670,634	
	$13,216,935	
Dividends declared	$10,799,852	10,499,840
Deficit from operations after payment of dividends		$6,228,073
Balance of amount received from U. S. Railroad Administration in settlement of claim for period of federal control		7,399,367
Net surplus for the year	$2,417,083	$1,171,294

ASSETS

7,665 cars and equipment less reserve for depreciation	$78,084,091	$80,840,273
Repair shops less reserve for deprecation	4,102,780	4,045,877
Pullman building less reserve for depreciation	970,745	985,682
Other real estate	1,140	6,651
Operating supplies, linen, etc.	8,137,961	9,082,976
Unexpired insurance	129,908	45,864
Securities	4,825,754	5,066,477
Equipment trust notes	2,717,199	3,469,847
Cash, government bonds and certificates of indebtedness	35,230,935	31,534,866
Bills and accounts receivable	13,607,904	5,023,561
Manufacturing departments, plants and investments	36,645,806	36,645,806
Total assets	$184,454,223	$176,747,880

LIABILITIES

Capital stock issued, 1,350,000 shares, par value $100 each	$135,000,000	$135,000,000
Accounts payable	19,026,911	15,199,661
Accrued dividend	2,699,964	2,699,960
Insurance and other reserves	3,939,715	2,477,709
Net surplus	23,787,633	21,370,550
	$184,454,223	$176,747,880

Railroad Equipment and Supply Exchange

The Railroad Equipment and Supply Exchange, Inc., Chicago, which was organized for the purpose of constructing a building which will house all railroad equipment and supply concerns located in Chicago in one building, with club facilities, an auditorium and adequate space for offices and display rooms, has completed a survey of the railway supply business in Chicago and has made a report covering 500 concerns. This report shows that these concerns are scattered about the city in more than 60 different buildings and localities and occupy a total of 973,205 sq. ft. of space, for which they pay an annual rental of $3,649,618. From the survey it is estimated that this yearly rental can be reduced to $1,730,108 for the same amount of space, thereby affording a saving of $1,946,510 per year.

It was also found that inadequate office facilities are prevalent under the present conditions and the opportunities to improve these conditions are limited. Prevailing rents prohibit the employment of any considerable space for extensive exhibit and eliminate the advantage of properly displaying merchandise and actual working exhibits.

The inconvenience to buyers of railroad equipment is also pointed out. It is stated that they must traverse considerable territory through heavily congested streets to see three or four concerns with whom they wish to do business because these concerns are scattered throughout the city. Attention is also called to the advantages to equipment and supply houses to be able to hold conventions occurring during the year in the auditorium of the building.

Trade Publications

HYDRAULIC MACHINERY AND POWER TOOLS.—"An Album of Engineering Achievement" is the title of a 64-page, illustrated catalog recently issued by the Southwark Foundry & Machine Company, Philadelphia, Pa., featuring the wide application of Southwark hydraulic valves, accumulators, presses, intensifiers, power punches, etc.

ELECTRIC HEADLIGHTS—A 12-page booklet entitled "Electric Headlights" has recently been issued by the Sunbeam Electric Manufacturing Company, Evansville, Ind., which illustrates and describes the locomotive headlight, industrial headlight, and floodlights manufactured by that company. The booklet also describes the focusing device used in conjunction with the air-tight, silver-plated, metal reflectors.

Railway Construction

CHESAPEAKE & OHIO.—This company contemplates the construction of a passenger station at Ashland, Ky., at a cost of approximately $300,000; additions to the freight station, extension of yard track and terminal facilities and the realinement of the main line track to the new terminal. The total project is to cost $2,250,000.

CHICAGO, ROCK ISLAND & PACIFIC.—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the erection of a 200-ton automatic electric coaling station of frame construction at Hutchinson, Kan.

ELGIN, JOLIET & EASTERN.—This company will soon call for bids for the construction of a subway under its tracks at Bluff road, Joliet, Ill., which will cost approximately $130,000.

GREAT NORTHERN.—This company contemplates the construction of a new one-story machine and repair shop at Minot, S. D., to cost approximately $85,000.

ILLINOIS CENTRAL.—This company will construct a new passenger station at Hazlehurst, Miss., at a cost of approximately $45,000.

ILLINOIS CENTRAL.—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the construction of a 3-track reinforced concrete electric coaling station at Council Bluffs, Iowa, and a 15,000-ton drag scraper ground coal storage installation in connection with the coaling plant.

JACKSONVILLE TERMINAL.—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the installation of a cinder handling plant at Jacksonville, Fla.

MISSOURI PACIFIC.—This company has awarded a contract to Joseph E. Nelson & Sons, Chicago, for the construction of a passenger station at Crane, Mo.

MOFFAT TUNNEL.—The Moffat Tunnel Commission has awarded a contract to Hitchcock & Tinkler, of San Francisco, Cal., and New York, for the boring of the Moffat Tunnel through the Continental Divide west of Denver, as reported in the *Railway Age* of September 1. The cost of the construction is estimated at $5,250,000.

NEW YORK, CHICAGO & ST. LOUIS.—This company plans the construction of a one-story addition, 99 ft. by 157 ft., to its shops at Ninety-third street and Stony Island avenue, Chicago.

NEW YORK, CHICAGO & ST. LOUIS.—This company has purchased 200 acres of land at Fort Wayne, Ind., as a site for a new freight terminal and yard.

PERE MARQUETTE.—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the construction of a 300-ton, 3-track, reinforced concrete electric coaling station at Erie, Mich., as reported in the *Railway Age* of May 12.

WESTERN FRUIT EXPRESS.—This company contemplates the construction of new shops at Hillyard, Wash., at a cost of approximately $200,000.

FIRE PREVENTION WEEK is to be from October 7 to October 13. Perhaps it gets monotonous hearing of all these specialized "weeks," but there are over 10,000 fires a year on America's railroads, and millions of dollars of railroad property have burned during the present year. There is no better time than the present for a general review of your own property and your own organization, to see if all preventable fire causes are being eliminated. According to a statement in the annual proceedings of the Railway Fire Protection Association it appears that when the United States Steel Corporation was formed, 22 years ago, the fire losses at all its properties ran about $800,000 a year for 750 fires. An active and systematic fire prevention work was established and these losses now average about $300,000 for 100 fires a year; and the corporation's properties and property values have multiplied many times.—From circular of the Railroad Insurance Association, 80 Maiden Lane, New York.

Railway Financial News

BALTIMORE & OHIO.—*Resumes Common Dividends.*—The directors on Wednesday declared a quarterly dividend of 1¼ per cent on the common stock, the first common dividend since March 1, 1919, when 2 per cent was paid. A quarterly dividend of 1 per cent on the preferred stock was also declared. Both dividends are payable December 1 to stock of record October 13.

CHICAGO & ALTON.—*To Pay Interest.*—Charles A. Peabody, chairman of the protective committee for the three per cent refunding 50-year gold bonds, has issued the following statement:

The court has ordered the receivers to pay prior to October 1, 1923, on the 3 per cent bonds, interest which became due April 1, 1923, with interest thereon at 6 per cent. The receivers have stated they expect to make this payment September 25, 1923.

Depositors should present their certificates of deposit promptly to the New York Trust Company, 100 Broadway, New York City, depositary, or to Illinois Merchants Trust Company, Chicago, Ill., sub-depositary, upon such presentation:

(1) Depositors who have not received an advance of the April 1, 1923, interest will receive such interest with interest thereon at 6 per cent to date of payment by the receivers; (2) those who have already received an advance of the April 1, 1923, interest will be credited with the payment thereof; (3) as the company is about to default in payment of the October 1, 1923, interest, any depositor who so requests may at any time on or after October 1 receive an advance of the October 1, 1923, interest.

INDIANA HARBOR BELT.—*Equipment Trusts Sold.*—J. P. Morgan & Co. have sold privately the $900,000 5 per cent equipment trust gold certificates of 1923, recently purchased by them from the company.

LEHIGH VALLEY.—*President Loomis Pleads for Transportation Act.*—In a letter to the stockholders President E. E. Loomis states several facts to show that the public, and particularly the shipping public, is adequately protected under the Transportation Act of 1920. The letter says in part:

While revision of this transportation law in some of its phases may be desirable, it is quite generally felt that the carriers should be given a rest from political agitation and legislation, and the public permitted to see what the railroads can do under existing laws before any additional experimental legislation is enacted.

A word to your representatives in Congress in line with the above will help to forestall possible impairment of the transportation capacity of the railroads. What the railroads now need is a legislative holiday.

KANSAS CITY SOUTHERN.—*Asks Authority for Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to guarantee an issue of $1,620,000 of 5½ per cent equipment trust certificates which have been sold to Ladenburg, Thalmann & Co., at 97.03.

WESTERN MARYLAND.—*Asks Authority to Issue Securities.*—This company has applied to the Interstate Commerce Commission for authority to issue $5,800,000 of five year, 7 per cent secured gold notes to be issued to retire a like amount of five year, 8 per cent notes which matured on August 1, and also to pledge $8,700,000 of first and refunding mortgage 5 per cent bonds as collateral for the notes. The bonds are now deposited as collateral for the 8 per cent notes, the holders of which are to be given a commission of 1¼ per cent in cash. The notes are to be convertible at the option of the holder into $1,000 of bonds for $730 of notes.

Dividends Declared

Baltimore & Ohio.—Common, 1¼ per cent, quarterly; preferred, 1 per cent, quarterly; both payable December 1 to holders of record October 13.

Boston & Providence—2½ per cent, quarterly, payable October 1 to holders of record September 20.

Gulf, Mobile & Northern.—Preferred, (initial), $1.00, payable November 15 to holders of record November 1.

Norfolk & Western.—Adjustment preferred, 1 per cent, quarterly, payable November 19 to holders of record October 31.

Northern Pacific.—1¼ per cent, quarterly, payable November 1 to holders of record October 2.

Southern Railway.—Preferred, 2½ per cent, payable October 31 to holders of record October 20.

Trend of Railway Stock and Bond Prices

	Sept. 25	Last Week	Last Year
Average price of 20 representative railway stocks	59.46	59.06	72.01
Average price of 20 representative railway bonds	81.98	81.95	89.34

Railway Officers

Executive

Henry T. Wickham, whose retirement as vice-president and general counsel of the Chesapeake & Ohio and the Hocking Valley and subsequent appointment as advisory counsel, was reported in the *Railway Age* of September 8, was born on December 17, 1849, at Hickory Hill, Va. He graduated from the University of Virginia in 1870, and entered railway service on February 1, 1874, as assistant attorney on the Chesapeake & Ohio. He was promoted to assistant counsel in 1878, and in January, 1886, was promoted to general solicitor, also being appointed at that time general solicitor of the Newport News and Mississippi Valley. Mr. Wickham was promoted to general counsel of the Chesapeake & Ohio on May 13, 1907, and on December 17, 1910, was elected second vice-president and general counsel. During the period of federal control he served as general solicitor and upon the termination of government operation in March, 1920, was again appointed vice-president and general counsel, with headquarters at Richmond. He was serving in this capacity at the time of his retirement at his own request, after 50 years of continuous railway service.

H. T. Wickham

Operating

E. G. Neumann has been appointed trainmaster of the Colorado division of the Union Pacific, with headquarters at Denver, Colo.

L. A. David, who has been on leave of absence on account of ill health, has resumed his former duties as superintendent of the Arkansas division of the Missouri Pacific, with headquarters at Little Rock, Ark.

P. L. Clarity, superintendent of the Terminal division of the Great Northern with headquarters at Minneapolis, Minn., has been appointed superintendent of the Minneapolis passenger station. **R. E. Landis,** superintendent of the St. Cloud division with headquarters at Melrose, Minn., has been given extended jurisdiction over the Terminal division with headquarters at Minneapolis, succeeding Mr. Clarity.

C. B. Davidson, whose promotion to superintendent of the Moberly division of the Wabash, with headquarters at Moberly, Mo., was reported in the *Railway Age* of September 22, entered railway service in September, 1893, as a telegraph operator and station agent on the Wabash. In May, 1898, he entered train service as a brakeman and in October, 1900, was promoted to freight conductor. In January, 1902, he was appointed chief clerk to the division superintendent and in March, 1903, was promoted to train dispatcher. Mr. Davidson was promoted to chief train dispatcher in December, 1910, and held this position until July, 1915, when he was promoted to trainmaster. From June, 1918, to October, 1919, he served as first lieutenant in the Engineer Corps of the American Expeditionary Forces in France, returning to the service of the Wabash on the latter date as trainmaster. He was promoted to superintendent of terminals in Kansas City, Mo., in April, 1923, which position he was holding at the time of his recent promotion to superintendent of the Moberly division.

A. L. Robinson, whose promotion to assistant to the general manager of the Wabash, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of September 22, was born on December 10, 1869, at Arlington, Ill. He entered railway service in 1889 as a brakeman on the Toledo, St. Louis & Western and a year later entered the service of the Wabash as brakeman. He later served successively as freight conductor, passenger conductor and general yardmaster. Mr. Robinson was subsequently promoted to trainmaster and later to assistant to the general superintendent, with headquarters at St. Louis. He was serving in this capacity at the time of his recent promotion to assistant to the general manager, with the same headquarters, the office of assistant to the general superintendent having been abolished. The position now held by Mr. Robinson is a newly created one. His duties will be confined chiefly to the handling of labor questions.

A. L. Robinson

Engineering, Maintenance of Way and Signaling

W. W. Drinker, terminal engineer for the Port of New York Authority, has been appointed chief engineer. Mr. Drinker has been acting chief engineer since the death last January of B. F. Cresson, Jr., chief engineer.

T. L. Doyle, assistant division engineer of the Logansport division of the Pennsylvania, with headquarters at Logansport, Ind., has been promoted to division engineer of the Grand Rapids division, with headquarters at Grand Rapids, Mich., succeeding W. R. Hillary, who has resigned.

Purchasing and Stores

J. H. Lauderdale, assistant manager of the department of materials and supplies of the Railroad Administration, has succeeded M. J. Wise, manager, who has resigned to accept service elsewhere.

Obituary

R. P. Dalton, former division superintendent of the Pere Marquette, who retired from active service in 1918 on account of ill health, died at his home in Chicago on September 20.

D. C. Cunningham, chief train rules examiner and former division superintendent of the Chicago, Burlington & Quincy, died at La Crosse, Wis., on September 19. Mr. Cunningham was born in 1858 and entered the service of the Chicago, Burlington & Quincy in 1880, as a clerk in the claim department. He later was engaged in similar work on the Chicago, Rock Island & Pacific and the Atchison, Topeka & Santa Fe. In 1885 he entered the service of the Chicago, Burlington & Northern, now the La Crosse division of the Burlington, during its construction. He was appointed assistant superintendent in 1890 and was appointed superintendent of the La Crosse division of the Chicago, Burlington & Quincy in 1899, when the two roads were merged. In May, 1902, he suffered an injury which necessitated the amputation of his right leg near the hip. His inability to get around readily with an artificial limb made it difficult for him to continue as an operating officer and on May 1, 1914, he was appointed chief train rules examiner. Mr. Cunningham was serving in this capacity at the time of his death.